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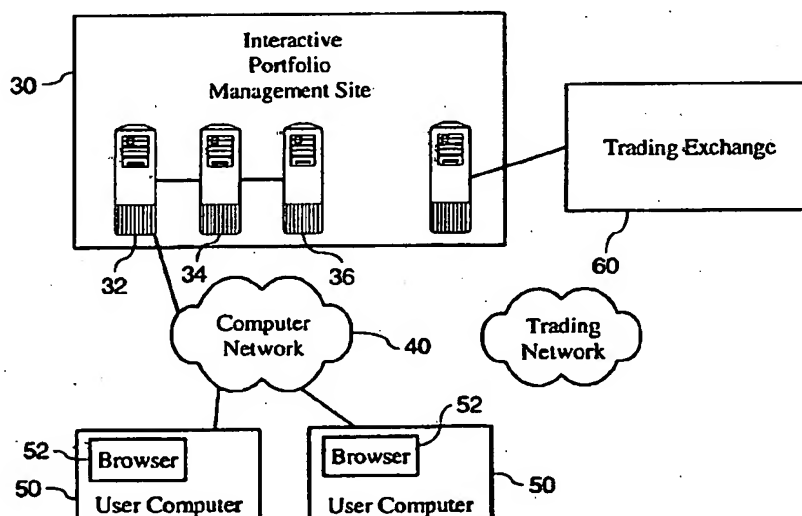
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(54) Title: INTERACTIVE PORTFOLIO MANAGEMENT SYSTEM



(57) Abstract: Methods, apparatuses and systems allowing for the calculation of suggested adjustments to a financial portfolio based in part on inputs received from a network of users. Users provide input that is aggregated and used in calculating adjustments to a financial portfolio. The financial portfolio, in one embodiment, can be a professionally-managed mutual fund portfolio or an individually-owned personal investment portfolio. In one embodiment, the present invention allows for a user-input-managed investment fund, where adjustments to the fund are influenced by input submitted by a community of users. In another embodiment, the present invention provides a system allowing users to calculate recommended adjustments to individual investment portfolios.



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## INTERACTIVE PORTFOLIO MANAGEMENT SYSTEM

### FIELD OF THE INVENTION

5 The present invention relates to financial portfolio management systems and, more particularly, relates to an interactive financial portfolio management system conducted over a computer network.

### BACKGROUND OF THE INVENTION

10 Traditionally, investors actively interested in managing their investment portfolios have invested in individual stocks while putting some money in mutual funds to reduce their risk. Other investors with less knowledge or time to put into managing their investments have opted either to invest strictly in mutual funds and other "low touch" investments, or to consult with a financial planner or stock broker, who recommends an investment strategy. Recently, mutual funds have experienced remarkable growth as investors seek to reduce risk through diversification, while providing a maximum rate of return. A mutual fund comprises a plurality of assets and/or financial securities including 15 stocks, bonds, stock futures, derivatives and commodities. A mutual fund investor, however, essentially yields control over his or her money to a fund manager who makes the investment decisions and extracts fees for managing the fund.

20 In addition, on-line investing is rapidly gaining popularity as users become more comfortable with conducting financial transactions over the Internet. Indeed, the increasing popularity and widespread use of the Internet is redefining the financial services industry. The information needed to make prudent investment decisions has become widely available over the Internet. Moreover, the growth of financial services sites on the world wide web reveals a trend toward the disintermediation of a broad range of service providers. For example, as the proliferation of on-line brokerages demonstrates, Internet users buy and sell stocks directly and are more than willing to forego the services of stockbrokers where it is perceived that their cost exceeds their value. 25

30 As to on-line investing, however, the financial services industry has primarily enabled transactions relating to traditional investment vehicles, such as stocks and mutual funds, to be conducted over the Internet and has not offered investment services or

products that take advantage of the unique features of the Internet or other wide area networks. Some mutual funds, however, allow investors to submit suggestions via the Internet to their fund managers. Based largely on subjective and qualitative factors, the fund manager decides whether to use or ignore these suggestions. This approach merely

scratches the surface of possibilities offered by the use of computer networks. Accordingly, while the prior art financial investment vehicles fulfill their respective objectives, they do not disclose or suggest portfolio management system, where adjustments to the portfolio are influenced by user input that has been weighted according to the past performance of each user.

#### SUMMARY OF THE INVENTION

The present invention provides methods, apparatuses and systems facilitating the calculation of suggested adjustments to a financial portfolio based in part on inputs received from a network of users. Users provide input that is aggregated and used in calculating adjustments to a financial portfolio. In one embodiment, user inputs are weighted as a function of each respective user's past performance in providing accurate and/or useful inputs. The financial portfolio, in one embodiment, can be a professionally-managed mutual fund portfolio or an individually-owned personal investment portfolio. In one embodiment, the present invention allows for a user-input-managed investment fund, where adjustments to the fund are influenced by input submitted by a community of users. In another embodiment, the present invention provides a system for users to calculate recommended adjustments to individual investment portfolios.

One embodiment of the present invention essentially capitalizes on the research efforts of a distributed network of interested users and uses such input in calculating adjustments to a financial portfolio, such as a mutual fund portfolio or an individual's financial portfolio. In one embodiment, the user inputs are in the form of projections or forecasts relating to a security. In one embodiment, the forecasts or projections include stock or asset price forecasts, and market condition forecasts including, but not limited to, interest rate forecasts and projections relating to market indexes, such as the Dow Jones Industrial Average. In one embodiment, a portfolio manager (e.g., a registered investment advisor managing a mutual fund and/or a plurality of individual investment portfolios, or even an individual user managing his own investment portfolio) configures portfolio management parameters relating to factors such as the filtering of forecasts, and the

parameters associated with calculating adjustments to a portfolio. In one embodiment, the present invention aggregates the user inputs and calculates suggested adjustments or a preferred asset mix to a given financial portfolio.

#### DESCRIPTION OF THE DRAWINGS

5           Figure 1 is a functional block diagram illustrating an embodiment of the system of the present invention.

          Figure 2 depicts an embodiment of a user interface that allows entry of stock price projections.

10           Figure 3 is a flow chart diagram illustrating a method allowing for adjustments to a financial portfolio according to one embodiment of the present invention.

          Figure 4 is a flow chart diagram illustrating a second method according to the present invention.

          Figure 5 is a functional block diagram setting forth an apparatus according to one embodiment of the present invention.

15           Figure 6 is a flow chart diagram illustrating a method allowing for receiving and filtering of forecasts according to one embodiment of the present invention.

          Figure 7 is a flow chart diagram setting forth a method allowing for filtering of forecasts according to one embodiment of the present invention.

20           Figure 8 is a flow chart diagram illustrating a method for adjusting influence profiles corresponding to users according to one embodiment of the present invention.

          Figure 9 is a flow chart diagram showing a method allowing for the weighting and aggregation of forecasts.

          Figure 10 is a flow chart diagram setting forth a method allowing for the tracking of changes to a portfolio.

25           Figure 11 depicts a user interface allowing for entry of forecast screening parameters related to the security attributes.

          Figure 12 provides another user interface allowing for the entry stocks to be excluded from calculated adjustments to a portfolio.

30           Figure 13 is a user interface allowing for the control of forecast screening parameters related to the users associated with the respective forecasts.

          Figure 14 is another user interface allowing for the control of forecast screening parameters.

Figure 15 is yet another user interface allowing for control of more forecast screening parameters.

Figure 16 is a user interface allowing for the configuration of portfolio management parameters related to the weighting and aggregation of forecasts.

5        Figure 17 is a user interface facilitating the configuration of portfolio management parameters related to portfolio adjustment models.

Figure 18 is a user interface facilitating the configuration of portfolio management parameters related to portfolio adjustment calculations.

10       Figure 19 is a user interface facilitating the configuration of sector weightings for a mutual fund.

Figure 20 depicts a user interface relating to the specification of a target range for the market sensitivity of a portfolio in relation to a benchmark.

Figure 21 illustrates a user interface displaying a set of calculated adjustments and facilitating the transmission of suggested adjustments to a trading desk for execution.

15                                      DESCRIPTION OF PREFERRED EMBODIMENT(S)

I. Operating Environment

Figure 1 illustrates an embodiment of the present invention as applied to computer network 40. Computer network 40 can be any suitable computer network, including an open, wide-area network, such as the Internet, or even a local-area computer network.

20       In addition, computer network 40 can comprise an electronic network, an optical network, a wireless network, and/or a combination thereof. As Figure 1 shows, one embodiment of the present invention operates in a computer network environment comprising interactive portfolio management site 30 and at least one network access device, such as user or client computer 50. In addition, communication between user  
25       computer 50 and interactive portfolio management site 30 can occur via a dedicated line. Still further, interactive portfolio management site 30, in one embodiment, is also operably coupled to at least one trading exchange 60 where trades are executed to adjust the holdings of the fund(s) managed by the site.

A. Interactive Portfolio Management Site

30       Interactive portfolio management site 30 receives input from a community of users and, in one embodiment, calculates adjustments to a financial portfolio. The financial portfolio can be a mutual fund portfolio or a personal investment portfolio. In one

embodiment, interactive portfolio management site 30 manages a mutual fund wherein a registered investment advisor configures portfolio management parameters relating to how user inputs are used in calculating adjustments to the mutual fund. In one form of this embodiment, interactive portfolio management site 30 offers mutual fund services to users, as well as the opportunity to participate in the on-line community relating to the submission of inputs. In one embodiment, interactive portfolio management site 30 manages a plurality of mutual funds, each configured with different portfolio management parameters, directed towards different investment objectives and goals. In another embodiment, interactive portfolio management site 30 provides functionality allowing users to manage individual financial portfolios. In one form, users provide data relating to current financial portfolios and investment objectives. Interactive portfolio management site 30, in one embodiment, receives input from a community of users and calculates adjustments to users' individual portfolios based at least in part on the user inputs from the community and the users' respective investment objectives.

As discussed above, interactive portfolio management site 30, in one embodiment, manages at least one mutual fund. In one embodiment, interactive portfolio management site 30 receives user input and determines how the holdings of the fund(s) are to be adjusted. In one embodiment, interactive portfolio management site 30 provides the user interface through which users communicate with the fund(s) and, in some embodiments, with other users. At interactive portfolio management site 30, users can view the holdings and status of each fund, place investment recommendations, and view investment recommendation histories and profiles. In one embodiment, users can also receive feedback relating to the accuracy of past investment recommendations. Interactive portfolio management site 30 also allows users to establish new accounts, maintain existing accounts, view their current positions and transaction histories, as well as transfer money in and out of each mutual fund. In one embodiment, interactive portfolio management site 30 also includes on-line brokerage services facilitating the purchase and sale of securities and other financial interests.

Additionally, in other embodiments, interactive portfolio management site 30 provides tools to enhance the user's experience. In one embodiment, interactive portfolio management site 30 provides an on-line investment community through which users interested in financial investments communicate with other like-minded users. In certain

embodiments, interactive portfolio management site 30 provides user rankings rating the performance of each user's inputs against all others. In other embodiments, users are ranked based on an aggregation of the performance or accuracy of each user's respective inputs. In yet other embodiments, interactive portfolio management site 30 includes on-line discussion forums, chat rooms and bulletin boards as means for exchanging information about or debating issues related to, for example, the holdings of a particular mutual fund, or general financial news. In one embodiment, interactive portfolio management site 30 provides links to web sites corresponding to the holdings of a mutual fund managed by the site 30, as well as links to financial research and news web sites.

In one embodiment, interactive portfolio management site 30 is a web site comprising web server 32, application server 34 and database server 36. Web server 32 receives requests for files or other data over computer network 40 and passes them to application server 34. In one embodiment, web server 32 authenticates users and transmits data to and from application server 34. In one embodiment, web server 32 transmits data to users and other sites using the SSL ("Secure Sockets Layer") encryption protocol, the S-HTTP ("Secure HTTP") protocol, or any other similar protocol for transmitting confidential or private information over an open computer network. In one embodiment, database server 36 stores content and other data relating to the operation of the system. Application server 34, according to one embodiment, accesses database server 36 and generates pages or other files that web server 32 transmits over computer network 40 to the intended recipient.

Figure 5 illustrates the portfolio adjustment functionality of one embodiment of the present invention. In one embodiment, database server 36 includes forecast database 304, active forecast database 306, filtered forecast database 308, user profile database 310, portfolio database 320, and portfolio parameter database 324. In one embodiment, application server 34 performs the majority of the operations necessary for implementing an interactive fund according to one embodiment of the present invention (see below). Application server 34, in one embodiment, includes forecast intake module 302, influence profile module 312, forecast screening module 314, asset management module 316, portfolio tracking engine 318, and market conditions interface 322 (see Figure 5). Although Figure 5 shows only one application server 34, the functionality described herein can be distributed or shared among a plurality of servers.

Forecast intake module 302 receives forecasts submitted by users and stores them in forecast database 304 and, in some embodiments, active forecast database 306. In one embodiment, active forecast database 306 stores open forecasts (see below). In one form, active forecast database 306, rather than storing the entire forecast, includes a list of pointers to active or open forecasts stored in forecast database 304. Portfolio parameter database 324 includes at least one portfolio management parameter relating to the desired objectives or limits of the portfolio. As discussed more fully below, in one embodiment, portfolio management parameters are operable 1) to screen out forecasts submitted by users, and/or 2) to control or influence how adjustments to the fund are calculated. In one embodiment, portfolio management parameters are specified by a registered investment advisor managing a mutual fund. In another embodiment, portfolio management parameters are specified by individual users managing their own respective financial portfolios. In another embodiment, portfolio management parameters are specified by registered investment advisors managing personal investment portfolios on behalf of individuals. Portfolio database 320 includes data relating to the holdings of at least one portfolio. In one embodiment, portfolio database 320 includes data relating to the holdings of at least mutual fund portfolio. In another embodiment, portfolio database 320 stores data relating to the holdings of at least one individual financial portfolio.

User profile database 310 stores data relating to users including, but not limited to, account names, addresses, account identifications, and account passwords. In one embodiment, user profile database 310 comprises a series of records corresponding to individual users. User profile database 310, in one embodiment, also stores data relating to the relative influence each user is accorded over calculated adjustments to financial portfolios. In one embodiment, user profile database 310 includes influence profiles, as well as past inputs (e.g., investment recommendation histories) corresponding to each user. According to one embodiment of the invention (and as more fully described below), a user's influence profile is a function of the performance or accuracy of his or her past input (e.g., investment recommendations, like forecasts and suggested adjustments). The influence profile corresponding to each user can be a rating, a ranking, or an accumulation of points, all of which are based on an evaluation of each user's past inputs. In one embodiment, user records include pointers to corresponding forecasts stored in forecast database 304.



Influence profile module 312 scores active forecasts and adjusts the corresponding user's influence profile. Forecast screening module 314 retrieves active forecasts and filters the forecasts based on at least one screening criterion. In one embodiment, filtered forecasts are stored in filtered forecasts database 308. In one embodiment, filtered  
5 forecast database 308 includes a list of pointers to the filtered forecasts stored in forecast database 304. Asset management engine 316 retrieves filtered forecasts and calculates adjustments to a financial portfolio, as more fully discussed below. Portfolio tracking engine 318 tracks market conditions via market conditions interface 322 and monitors the status of at least one portfolio. In one embodiment, portfolio tracking engine 318 issues a  
10 notification to a portfolio manager when a portfolio adjustment condition has occurred.

The databases described above can be any form of database known in the art (for example, a relational database or flat-file database). In one embodiment, each database has associated therewith a collection of computer programs enabling the storage, modification, and extraction of information in the database. The databases may be stored  
15 on any suitable device ranging from personal computers (for small systems) to mainframes (for large systems). In addition, the functionality of servers 34 and 36 may be implemented in hardware or software, or a combination of both. In one embodiment, each server is a programmable computer executing computer programs, comprising at least one processor, a data storage system, at least one input device, and at least one  
20 output device. In addition, as one skilled in the art will recognize, the databases described above may reside on application server 34, or may reside separately on database server 36.

In one embodiment, a password is required to gain access to user and/or investor accounts. According to one embodiment, each user account includes a user name, and a  
25 password or an encrypted representation thereof. In one embodiment, server 32 authenticates users in a conventional manner. In one embodiment, server 32 prompts the user for a user name and a password to authenticate the user. Numerous authentication protocols are known in the art. The actual authentication protocol used is not critical to the invention. In one form, communication of account data between  
30 interactive portfolio management site 30 and user computer 50 is transmitted using a secure communications protocol. In one embodiment, the browser 52 implemented on user computer 50 supports the SSL ("Secure Sockets Layer") protocol, the S-HTTP ("Secure

HTTP<sup>®</sup>) protocol, or any other similar protocol for transmitting confidential or private information over an open computer network.

#### B. User Computers

Users access interactive portfolio management site 30 and other sites and services on computer network 40 with a network access device, which receives, displays and transmits data over a computer network. In one embodiment, a network access device is a browser executed on a personal computer, a browser executed on a network computer, a browser on a cell phone or personal digital assistant, or a voice response unit on a telephone.

One embodiment of present invention is implemented using page-based interfaces transmitted to user computer 50 having a browser 52 and a connection to computer network 40. User computer 50 can be any computer, special-purpose computing device, or any other suitable device for performing the required functionality. In one embodiment, user computer 50 includes at least one processor, a data storage system (including volatile and non-volatile media), a keyboard, a display, at least one input device and at least one output device. In one embodiment, the user's computer is connected to the Internet via a modem dial-up connection or through a network line. Such communication, however, could also be wireless. In addition, although embodiments of the system are described as working in conjunction with a browser, any suitable device or application for receiving, displaying and transmitting data over a computer network can be used in the present invention. In one embodiment, the browser 52 implemented on user computer 50 supports the SSL ("Secure Sockets Layer") protocol, the S-HTTP ("Secure HTTP") protocol, or any other similar protocol for transmitting confidential or private information over an open computer network.

#### II. Operation

Figure 3 illustrates the overall operation of one embodiment of the present invention. Interactive portfolio management site 30, in one embodiment, receives and stores user inputs submitted by users, at user computers 50, over computer network 40 (Figure 3, steps 102 and 104). When it is time to adjust a financial portfolio (step 106), interactive portfolio management site 30, according to one embodiment, filters active investment recommendations against at least one screening criterion (step 108). Interactive portfolio management site 30, in one embodiment, weights the filtered

investment recommendations based on the influence profile of the corresponding users and aggregates them to yield an aggregate investment recommendation for each security (step 110). Interactive portfolio management site 30 uses the weighted aggregate investment recommendations in calculating adjustments to a portfolio (step 112). In one  
5 embodiment, the portfolio is a mutual fund portfolio managed by interactive portfolio management site 30. In one embodiment, interactive portfolio management site 30 executes trades to implement the calculated adjustments (step 114) and monitors the status of the mutual fund portfolio for the occurrence of a portfolio adjustment condition (step 116).

10 A. User Input and Investment Recommendation Capture

Interactive portfolio management site 30 receives input from users, at user computers 50, relating to projections about securities or other market conditions. (See Figure 3, step 102). In one embodiment, shown in Figure 5, forecast intake module 302 receives user input and stores it in forecast database 304 and, in some embodiments,  
15 active forecast database 306. In one embodiment, user input is received during a submission period at the end of which the inputs are used in calculating adjustments to a portfolio and are later scored to adjust each user's influence profile or rating, which, in some embodiments, determines the user's relative influence over subsequent calculated adjustments to a financial portfolio. In one embodiment, there is no interval between  
20 submission periods, such that users may submit input at any time they wish.

As will become apparent from the description provided below, one embodiment of the present invention essentially capitalizes on the research efforts of a distributed network of interested users and uses such input in calculating adjustments to a financial portfolio, such as a mutual fund portfolio or an individual's financial portfolio. In one  
25 embodiment, the user inputs are in the form of projections or forecasts. In one embodiment, the forecasts or projections include stock or asset price forecasts, and market condition forecasts including, but not limited to, interest rate forecasts and projections relating to market indexes, such as the Dow Jones Industrial Average.

In another embodiment, the user inputs comprise suggested adjustments to a  
30 mutual fund. In one embodiment, the user inputs may include a recommendation to acquire a stock or other asset not currently held by the fund, purchase more shares of a stock currently held by the fund, or sell some or all of the shares of a particular stock

currently held by the fund. Furthermore, in yet another embodiment, the interactive portfolio management site 30 receives user input including, but not limited to, product or service reviews and ratings, projected earnings forecasts, and other data related to a particular company or asset that is useful in predicting positive or negative movements in a company's stock price.

In one embodiment, the right to submit inputs to interactive portfolio management site 30 is unconnected to either investment in a mutual fund or personal investment portfolio associated with the site 30. In another embodiment, only investors in a mutual fund managed by interactive portfolio management site 30 have the right to submit inputs that influence calculated adjustments to that fund's holdings. In another embodiment, non-investors to the fund are permitted to submit user input (see, e.g., section II.C.3., below). As discussed in other sections herein, user inputs, such as stock forecasts, are recorded in a number of database tables to be used in later processes.

In some embodiments, the holdings of a mutual fund managed by interactive portfolio management site 30 can be channeled into specific markets or types of holdings per the goals of the fund and/or the fund's prospectus, as specified and controlled by a registered investment advisor. As discussed more fully below, Figure 19 illustrates a user interface allowing a portfolio manager to channel a fund into a particular market sector or into a plurality of market sectors. In one embodiment, this channeling is implemented by restricting the types of assets that user's may suggest. For example, forecast or other inputs submitted by users that contravene the objectives or parameters of a given fund are not used in calculating adjustments. For example, an investment fund restricted solely to investing in biotech stocks will reject investment recommendations suggesting the acquisition of shares in a computer software company. Notably, a fund with different parameters may use the inputs, such as forecasts, that other funds reject.

#### 1. Projections and Forecasts

As discussed above, in one embodiment, users submit forecasts or projections relating to market conditions or forecasts relating to particular stocks or other financial assets (e.g. bonds, commodities, options, real property). In one embodiment, users submit forecasts predicting the future performance of publicly trade stocks or other investments. Figure 2 illustrates one embodiment of a user interface 100 for entering stock price projections. When a user selects a particular security or other asset, he or she

is presented with an interface 100 into which a projection or forecast concerning the stock's performance can be entered. As Figure 2 shows, an embodiment of the interface can also provide detailed information about the selected stock or asset.

5 In the embodiment shown in Figure 2, the user has the option of specifying a two-week projected price (field 102), a three-month projected price (field 104), and/or a six-month projected price (field 106) for the selected security or asset. Of course, any range of time values can be used. The specific time values for the length of the projections can be fixed by interactive portfolio management site 30 or specified by the user. In addition, the time values for such projections can be configured, in one embodiment, according to  
10 the desired characteristics and goals of a particular fund.

According to one embodiment of the present invention, each user is also limited as to how many inputs he or she may submit in a given time period. In one embodiment, each user is limited to three inputs per day. Another embodiment of the present invention limits users to three inputs per submission period. In other embodiments, there  
15 is no number limit to the inputs a user may submit. In one form of this embodiment, the number of inputs a user may submit is limited only by the amount of influence he or she possesses (see below).

As described more fully below, each input, in one embodiment, is subsequently evaluated against the actual performance of the market to adjust the influence profile of the corresponding user. In one embodiment, a user's influence profile affects the level of  
20 influence each user has over calculated adjustments to a portfolio (see description below). As to forecasts or projections, each such input, in one embodiment, is evaluated at the end of the time value for the projection. For example and in one embodiment, a stock price forecast for a two-week close is evaluated at two weeks from the time at which the forecast was submitted. In another embodiment, each projection or forecast is evaluated  
25 and scored when the user logs in and accesses his or her account to give the user an indication of how the forecast or projection may affect his or her influence profile. However, in such an embodiment, only when the forecast closes is it evaluated and scored for purposes of adjusting the user's influence profile.

## 30 2. Suggested Adjustments

In another embodiment, users submit suggested adjustments to a financial portfolio, such as a mutual fund. Such suggested adjustments include, but are not limited

to, buy, sell and hold recommendations as to a particular security or asset, as well as recommendations to take long or short positions. More specifically, a user presented with the list of holdings in a particular fund is provided the option to select a particular holding and recommend a particular action. For example, a user may select a certain stock and recommend acquiring twenty percent more of such stock. Alternatively, the user may submit a recommendation of selling twenty percent of the holdings in the stock. Additionally, the user may submit a recommendation to buy a specified amount of shares in a stock that is not currently held by the fund.

The time and frequency at which suggested adjustments are evaluated can vary widely depending on the particular objectives of the fund. According to one embodiment, suggested adjustments are evaluated and scored once at a predetermined interval from the time at which the user submits the suggested adjustment. In an alternative embodiment, the suggested adjustment is evaluated at a time designated by the user. In yet other embodiments, a suggested adjustment can be repeatedly evaluated at intervals predetermined by interactive portfolio management site 30 or the user.

### 3. Other User Input

In other embodiments, interactive portfolio management site 30 captures user input relevant to market conditions and specific investments. In one embodiment, user input comprises product or service ratings. More specifically and according to one embodiment, interactive portfolio management site 30 presents users with an interface asking for a rating comparison of a group of related products. This rating data can then be used to select particular securities within a specific industry segment. Such user input can include, but is not limited to, product or service reviews or ratings, projected earnings forecasts of a particular company or market, and other data related to a particular company or asset. As discussed more fully below, this user input is weighted according to each respective user's past performance in providing accurate, useful, and/or reliable input.

### 4. Investment Recommendation and Effect on Influence over Calculated Adjustments to a Financial Portfolio

In one embodiment, user input is weighted based on a user's influence profile. In other embodiments, user inputs are treated equally and are not weighted in relation to corresponding influence profiles. As discussed above, the accuracy and/or performance

of each investment recommendation submitted by a user becomes part of that user's performance history or influence profile and, in certain embodiments, affects the amount of influence over calculated adjustments he or she will be subsequently granted. In one embodiment, a user's influence is measured in points. According to one form of this  
5 embodiment, a pre-determined number of points is allocated to each investment recommendation. In one embodiment, the number of influence points awarded or taken away from a user is a function of the score of their investment recommendation (see section II.B.1, below).

Some embodiments of the present invention are configured such that the user can  
10 adjust the effect of a particular investment recommendation on the user's future influence over the fund. As Figure 2 illustrates, in one embodiment, interface 100 includes fields 108 and 110 that prompt users for a ranking or weighting of their confidence in the forecast. More specifically and in one embodiment, users can allocate a portion of their influence as a way of indicating their confidence in a particular investment  
15 recommendation. In the embodiment shown in Figure 2, user influence is measured in points. Accordingly, interface 100 prompts users to bid or allocate some number of their influence points against each specific investment recommendation. In one embodiment, the number of influence points awarded or taken away from a user is a function of the score of his or her input in relation to the number of influence points the user bid.

## 20 B. Scoring of User Input

According to one embodiment, user input (e.g., forecasts, adjustments, and other data) is evaluated and assigned a performance value or score (see Figure 8). The description provided below is illustrative of some of the methods for scoring user inputs. The scoring of user inputs is subsequently used to adjust each user's respective influence  
25 profile (Figure 8, step 612). As discussed more fully below, the effect of user inputs on aggregated inputs and, therefore, calculated adjustments to a portfolio, in one embodiment, depends on each respective user's influence as it is adjusted over time. In one embodiment, influence will be assigned to users or taken away from them in the form of influence points or IPoints. In one form, the higher the number of IPoints held by  
30 a user, the greater the influence her forecasts have over the actual holdings of the fund.

### 1. Forecast or Projection Scoring

In one embodiment, interactive portfolio management site 30 evaluates and scores

each user's forecasts. In one embodiment, this evaluation occurs at predetermined intervals. In one embodiment, user forecasts are scored at the close of the forecast. Many different algorithms can be used to evaluate the forecast or projection. The results of the evaluation can be a score, a grade, a rating, a ranking or any other suitable measure of performance.

In one embodiment, the evaluation of each forecast is based on a combination of some or all of the following factors, including:

1) Accuracy – This is the difference between the predicted price from the time the forecast was made and the actual price.

2) Risk – Risk is determined by the potential effect of the forecast on the performance of the fund. This is gauged by the percentage swing of the prediction. A higher percentage swing, up or down, is likely to have a greater effect on the performance of the fund.

3) Performance – The gain/loss that resulted from the forecast is calculated. Obviously, the higher the gain, the better the recommendation. In one embodiment, the gains that would have resulted from the forecast are compared (in terms of percentage increases and decreases) to the weighted average gains of the fund to determine the forecast's overall effect on the fund's performance.

4) Direction of Movement – In one embodiment, this factor is evaluated by determining the suggested direction based on the difference between the current price at the time of the forecast and the forecasted price and the actual change between the current price at the time of the forecast and the actual price when the forecast expires. In one embodiment, a user receives a positive score for this factor when the predicted direction of movement matches the actual direction of the change in price or value of the asset or stock.

5) Luck – If the actual price of the stock or asset is higher than the predicted price increase and vice versa, a "luck" factor is measured by assessing the difference between the predicted and the actual price. (For example: Bob recommends IBM to be at \$50 when, at the time of his forecast submission, IBM is \$40. When the forecast expires IBM is at \$55.  $55 \text{ (actual)} - 50 \text{ (prediction)} = 5 \text{ (luck).}$ ) In one embodiment, this factor counter-acts or balances a high score as to the performance factor.

In yet other embodiments, the forecast evaluation may also include the confidence



level expressed by the user in the forecast. In one embodiment, this is gauged by determining what percentage of the investor's total influence points were placed on the forecast. The higher the percentage of influence an investor uses on a forecast, the more confident in the forecast the investor is presumed to be.

5           In one embodiment, the opening price for a selected stock in a forecast is set at the time the forecast is recorded. In one embodiment, the evaluation is based on the closing price the day after the evaluation period ends. For example, a two-week forecast made on July 1st is evaluated against the closing price on July 15th. In another embodiment, the forecast is evaluated and scored on the day the forecast closes.

10           The factors described above can be used in a variety of ways to achieve a forecast score. In one embodiment, the forecasts are scored giving equal weight to all components used in the evaluation. In this implementation all components, equally weighted, would be multiplied to determine a score for each forecast. The score can be either negative or positive depending on the direction of movement of the particular  
15 security relative to the forecast. In an alternative embodiment, a forecast that predicted a direction of movement opposite from what actually occurred receives a score of zero, while forecasts consistent with the actual direction of movement receive a positive score. In other embodiments, ratio analysis is used to evaluate the forecasts. One embodiment uses the ratios of Performance to Risk and Precision to Confidence. Using a standard  
20 distribution for each ratio, scored ratios can be summarized and evaluated. The score for the forecasts is stored and summarized in database records for further calculations and trend analysis. In another embodiment, one factor, such as direction of movement provides a base score to which other factor scores are multiplied to achieve a forecast score. For example and in one embodiment, if a forecast is directionally correct it  
25 receives a base score of 100 points. Other factors such as accuracy, confidence, consistency (historically good accuracy) and duration (how far out in the future the forecast was made) are multiplied to the base score to yield a forecast score. In addition, a negative base score can similarly be used in the instance where a forecast is directionally incorrect.

30           As discussed above, the forecasts may be scored based on a combination of some, or all of the above-provided factors, as well as additional factors that prove useful in improving the predictive ability of the aggregate community forecasted returns. For

example and according to one embodiment, after the close of a trading day, a process will be run that will score all expired forecasts. The score will look at the change in the asset's price from the time the forecast was made to the scoring day's close and compare the actual change with the forecasted change in the securities price. In one embodiment, the score of each forecast is based on the precision of the forecast. The scoring methodology will use the following logic:

1) Direction of Movement – The methodology determines if the forecast was directionally correct. (See above.) The direction of movement will either be correct or incorrect and influence is adjusted accordingly. In one embodiment, influence points will be added or subtracted as required.

2) Degree of Precision – In this embodiment, the degree of precision or accuracy (see above) is determined on a scale of 0 to 100. Influence is awarded based on the degree of precision. In one embodiment, influence points are awarded proportional to the precision. One embodiment uses a step-up function to determine the amount of points awarded. Table 1 below illustrates one such step-up function. Of course, any function can be used. The parameters of such a function can be optimized as required to achieve the particular objectives of the fund.

Range	% of Points Awarded
90 to 100%	100
80 to 89%	90
70 to 79%	80
60 to 69%	70
50 to 59%	60
40 to 49%	50
30 to 39%	40
20 to 29%	30
10 to 19%	20
0 to 9%	10

Table 1

In one embodiment, influence is deducted if the predicted direction of movement in the user's forecast turns out to be incorrect. In one embodiment, influence points are deducted in such circumstances. In one such embodiment, a step up function as

illustrated in Table 2 is used to proportionally reduce points based on actual movement of the stock or asset price. Of course, any suitable function can be used.

Opposite change in Price	% of Points Reduced
1 to 5%	25
6 to 10%	50
11 to 15%	75
> = 16%	100

Table 2

As an illustrative example, assume Bob forecasts that stock in IBM, currently at \$45 per share, will be \$50 per share in one week. After one week IBM's share price is actually \$40. Under this scenario Bob's forecast is directionally incorrect. The degree of incorrectness is determined by how much the stock went down from the day he provided the forecast, or in this case 5, which is approximately an 11% decrease. According to the function represented in Table 2, Bob would lose 75% of the influence points allocated to that forecast. As discussed above, in one embodiment, a predetermined amount of influence points is allocated to each forecast. In another embodiment, discussed above, each user specifies or "bids" an amount of influence points that he wishes to allocate to the forecast.

In addition, one embodiment of the present invention uses a multiple function that awards users for providing consistently high-scoring forecasts. For example and in one embodiment, every user's forecast that is better than 75% accurate (of course, this threshold may vary) is considered "correct." In one embodiment, the first time a user's forecast is "correct," he receives a standard point distribution. The second, consecutive time the user submits a "correct" forecast, the user receives double the standard distribution. The third consecutive and "correct" forecast receives triple the standard distribution. Of course, any progressive scheme can be used to reward, or bring to the top, those users with the best information.

## 2. Suggested Adjustment Scoring

Suggested adjustments submitted by users are scored in a similar manner. In one

embodiment, the collection of each user's transaction recommendations are recorded as the user's vote for how to manage the portfolio for the time period. After a specified time frame (e.g., a week, a month, etc.), the impact of each user's vote will be measured and scored as if their recommendations had actually been implemented. This score ultimately translates into influence (see section II.C., below).

### C. Influence Profiles

As discussed above, a user's influence profile depends on his or her past performance as reflected by the aggregate score of inputs (e.g., investment recommendations, etc.). There are several ways to represent or characterize a particular user's influence profile, including, but not limited to points, rankings, ratings, grades, or a combination of any of the foregoing. The specific rating mechanism used is not critical to the present invention. Rather, the user's influence profile need only be adjusted (increased or decreased) as a function of the performance of his or her input. In one embodiment, past performance is an aggregation of all investment recommendation scores particular to an individual user. From this aggregation of scores, a particular user can accumulate influence points, receive a ranking, rating, grade, or any other suitable measure of influence.

As discussed above, user profile database 310 stores the influence profile associated with each user. In one embodiment, each user record includes fields comprising an influence profile. In one embodiment, the influence profile includes a quantity of influence points allocated to the user, a rating, and a ranking. As discussed more fully below, any one or a combination of components of a user's influence profile can be used as a criterion to screen out a specific forecast (see section II.D.1., *infra*) and/or weight a specific forecast (see section II.D.2., *infra*). In other embodiments, however, a user's influence profile is merely used as a mechanism to rank members of the community using interactive portfolio management site 30 and is not used in weighting user inputs.

Figure 8 illustrates a method for adjusting the influence profile of a plurality of users based on the performance of submitted forecasts. In one embodiment, influence profile module 312 scans active forecast database 306 for closed forecasts (*i.e.*, a forecast whose projected time has been reached) (see Figure 8, steps 602, 604 and 606). In one embodiment, influence profile module 312 repeats this monitoring and scoring loop on a

periodic basis (e.g., daily in a nightly batch process) to score closed forecasts (step 608), remove closed forecasts from active forecast database such that they no longer possess potential influence over calculated adjustments to a portfolio (step 610), and adjust users' influence profiles based on the scored forecasts (step 612).

5           1.     Influence Point Allocation

As discussed above, a user's past inputs are evaluated and scored. In one embodiment, this score is used to award or take away influence points from a user. According to one embodiment, a user may have either a positive or negative number of influence points. In one embodiment, if a user provides a stock price projection and the stock price moves opposite the projection, the user receives a score of zero and loses a predetermined amount of influence points. In another embodiment featuring a different scoring system, the user receives a negative score reflecting the relative extent to which the forecast was incorrect. In this embodiment, the number of influence points taken away from the user depends on the score received. On the other hand, if the stock price moves consistent with the projection, the user is awarded a number of influence points proportional to the score received for the forecast.

In one embodiment, the distribution of influence points based on input scores includes a progressive element. More specifically and in one embodiment, the number of influence points awarded for a particular score increases as the user demonstrates a history of submitting accurate inputs. For example, the number of influence points awarded for a particular forecast score may be multiplied by some factor equal to the number of previous consecutive forecasts that scored above a certain threshold. Of course, a variety of progressive point allocation schemes may be employed.

In one embodiment, there is a fixed pool of influence points for a particular mutual fund. When a user successfully beats the performance of the current fund holdings for a given period, he is awarded some number of influence points proportional to how well his inputs outperformed the current holdings of the fund. At the same time, users that perform below the current holdings of the fund lose influence points. In another embodiment, there is no fixed pool, but instead the pool of influence points grows and shrinks as needed. In this scenario, each user's influence points measurable by comparing the numbers of influence points held by other investors.

As discussed above, one embodiment requires users to provide a bid of influence

points to indicate a level of confidence in the input. Under this embodiment, the distribution of influence points will be a function of the amount of influence points bid on a forecast and the score of the forecast. In one embodiment, if the user predicts that the stock price will increase and the price actually decreases, at the end of the evaluation period the investor will lose all influence points bid against that forecast. If the investor correctly determines the direction of change, the influence points awarded is a function of the score that the investor receives for the forecast.

In addition, an embodiment of the present invention can be configured to include categories of influence. For example, users with a proven record of providing accurate and useful short-term forecasts can be accorded more influence with respect to short term forecasts. Similarly, those users possessing a successful history of providing long-term forecasts are accorded more influence over such forecasts. In one embodiment, categories of influence points are used to implement this system. For example, each user may be accorded "S" points according to his or her history of providing short-term forecasts and "L" points corresponding to long-term forecasts. Under such a system, the forecasts are scored as provided above. In addition, any number of influence categories can be established depending on the parameters of the particular implementation. In other embodiments, "DOW" points may be awarded for accurate forecasts of the Dow Jones Industrial Average. Still further, users can attain "I" points for accurate interest rate projections. These influence categories would then be used as appropriate in embodiments involving the weighting of input (see section II.D., below).

## 2. New and Returning Users

In one embodiment, a each new and returning user receives no influence points at registration. In this form, the influence points associated with a particular user can be a negative or positive value depending on the users performance (see above). In one embodiment, returning users are given the number of influence points she had when she ceased interaction with the site 30.

In one embodiment involving mutual funds managed by interactive portfolio management site 30, all new investors are given influence points proportional to the dollar amount initially invested into a fund. For example and in one embodiment, a user who invests \$10,000 into the fund will receive 5,000 influence points. Of course, one skilled in the art will recognize that the exact proportional value used, if any, is not critical

to the present invention. In one form of this embodiment, investors also receive points proportional to every additional dollar invested in the fund after the initial investment. In another embodiment, new users are initially awarded influence based upon past activity outside of the fund. In one embodiment, new users are awarded influence based on the past performance of the user's personal investment portfolio. In another embodiment, new users are awarded influence based on their past performance in investment competitions and games conducted on the Internet and other computer networks. According to one embodiment, if a user leaves the fund and subsequently reinvests, his influence points total at the time he or she left the fund is restored up to the dollar amount he last invested in the fund. For every additional dollar over this amount, the investor receives an additional share of influence points.

### 3. Gaining Influence Without Investing

In other embodiments involving mutual funds according to the present invention, users need not invest to gain influence over calculated adjustments to a portfolio.

According to one form of this embodiment, users submit inputs to interactive portfolio management site 30 over a predetermined time. These inputs are scored, but do not influence calculated adjustments to the fund. If after the predetermined amount time, the user's aggregate score exceeds a predetermined threshold, he or she is given a level of influence over the fund. In one embodiment where influence is measured in points, the qualifying user may be given a predetermined amount of influence points. After this initial award of influence, the user then participates in the fund as any other user.

### 4. Reward Allocation

One embodiment of the present invention financially rewards users who have demonstrated a consistent and high performance level. In one embodiment, interactive portfolio management site 30 rewards users on a period basis out of a pool reserved for such rewards. For example and in one embodiment, interactive portfolio management site 30 allocates funds to reward the top performing users over a particular time period. In one embodiment, the reward pool is distributed according to a schedule giving a fixed amount to the top performer for the period, and lesser fixed amounts to other performers above a performance threshold on a graduated scale.

In one embodiment, users are rewarded according to how their respective inputs have benefitted the holdings of a fund. In one embodiment, on a periodic basis

(quarterly, for example), some percentage of the management fees of the fund (e.g., .0625% of the fund's holdings or approximately 25% of the overall quarterly management fees) are awarded to the top influence holders during that period. In one embodiment, the top influence holders possess the greatest number of influence points or the highest ranking. In another embodiment, a threshold of influence point holdings will be established. All influence point holders over that threshold receive a portion of this distribution proportional to the number of influence points in excess of the threshold they have accumulated. This award can be distributed as money in each qualifying user's account, or as additional equity in the fund.

#### 10 D. Fund Adjustment

Interactive portfolio management site 30, in one embodiment, aggregates the inputs submitted by users and calculates adjustments to a financial portfolio. In one embodiment, each user input is weighted and aggregated to yield an aggregate input (see section II.D.2., below). This aggregate input is then used in calculating adjustments to the holdings of a portfolio, such as a mutual fund portfolio. In some embodiments, other inputs (whether submitted by users or derived from other sources) are also used in calculating adjustments to the fund. (See below.) In one embodiment, user inputs are weighted and used to calculate an expected return on a security. The calculated expected return is then used in a fund adjustment model (see section II.D.4., below).

20 In one embodiment, on a periodic or other basis, the active forecasts for all users are aggregated as to each security. In one embodiment, based on each user's historical influence rating, interactive portfolio management site 30 weights and combines all the forecasts and determines how a given portfolio should be adjusted. This combined user input can recommend that new stocks be added, current stocks be removed, or the input  
25 can simply recommend percentage holding changes to a portfolio.

In one embodiment, interactive portfolio management site 30 manages a portfolio adjustment model that calculates suggested adjustments to a financial portfolio. In one form, interactive portfolio management site 30 specifies and controls various portfolio management parameters that influence the filtering of forecasts and the calculation of suggested adjustments to a portfolio. In one embodiment, interactive portfolio  
30 management site 30 manages a mutual fund. In one form, a Registered Investment Advisor manages the mutual fund in part by managing and specifying portfolio



management parameters. In one embodiment, portfolio management parameters are stored in portfolio parameter database 324. In one embodiment, portfolio parameter database 324 includes a set of portfolio management parameters for each fund and/or other financial portfolio associated with interactive portfolio management site 30.

5 Portfolio management parameters, in one embodiment, relate to the goals or objectives of the fund (e.g., growth or value oriented), the type of fund (etc., small-cap, large-cap), legal requirements for the fund (e.g., the maximum percentage holding of any given security), and to how forecasts are filtered. As discussed in more detail below, Figures 11 thru 20 illustrate various user interfaces allowing a manager of a mutual fund of interactive  
10 portfolio management site 30 to specify portfolio management parameters and other settings relating to portfolio adjustment.

1. Filtering of Forecasts and Securities

Interactive portfolio management site 30, in one embodiment, screens or filters user input against at least one criterion to determine eligibility for inclusion in calculated  
15 adjustments to a portfolio. Any suitable filtering algorithm and/or filtering criteria may be used. Figures 11 thru 15 provide illustrative examples of user interfaces allowing a portfolio manager to select and/or specify values for various filtering criteria for securities forecasts submitted by users. In one embodiment, and as the various figures show, forecasts are screened or filtered on the basis of various attributes of the forecast itself, the  
20 security designated by the forecast, and the user associated with the forecast. In one embodiment, the remaining forecasts are further screened based on at least one attribute of a group of associated forecasts involving the same security. In other words, interactive portfolio management site 30, in one embodiment, checks to make sure that there are enough forecasts remaining after an initial filtering step based on certain conditions for the  
25 security to be considered.

Figure 11 illustrates a user interface allowing a manager to select (e.g., turn on and off) and specify threshold values for attributes of securities designated in user forecasts. In one embodiment, a forecast can be filtered against any one or a combination of the following securities attributes: Debt to Total Capital, Dividend Yield, Market  
30 Capitalization, Price to Earnings, Price to Book, Price to Sales, Return of Equity, Average Daily Volume, Current Ratio, Debt to Equity Ratio, EPS Growth, Float, Interest Coverage Ratio, Sales Growth, PEG Ratio, Quick Ratio, and Return on Assets. Of course, other

security attributes may also be used. As Figure 11 shows, the stock screening interface also allows a manager to specify what percentage of the securities in the portfolio must meet the particular constraint. In addition, Figure 12 provides a user interface allowing a portfolio manager to expressly exclude forecasts involving certain securities.

5           Figure 13 sets forth a user interface allowing a manager to exclude a forecast on the basis of attributes of the users associated with the forecast. For example, such user attributes can include, but are not limited to, the total number of influence points allocated to the user, the ranking of the user in relation to points, accuracy, and/or consistency, the title or grade of the user (e.g., Fund Mgr, Analyst, Jr. Analyst, Intern, etc.),  
10          the number of closed forecasts associated with the user, the amount of time the user has been submitting forecasts, and whether the user belongs to a specific group or industry sector.

          Figure 14 provides a user interface allowing a portfolio manager to screen forecasts based on other forecast attributes. For example, manager of a high-risk fund whose goal  
15          is to capitalize on short term investments may configure portfolio management parameters screening out all forecasts except short-term projections, such as projections for the next day, week, or even hour. In contrast, a fund focusing on long term investments may limit the forecasts to monthly, quarterly, semi-annual, and annual periods. In addition, a forecast can be screened on the basis of: 1) whether the forecast is unrealistic, 2) the date  
20          on which the forecast was submitted, 3) whether the user associated with the forecast has submitted more than one forecast for the same stock (if so, the more recent forecast, in one embodiment, is used), 4) whether the forecast has been bypassed (i.e., the stock was at 10 when the user submitted a forecast of 14, however at the time of filtering the stock price was 15), and/or 5) whether the user's demonstrated accuracy with respect to the  
25          specific stock exceeds a threshold level.

          Figure 15 illustrates a user interface allowing a portfolio manager to specify further filtering criteria for the forecasts that remain after an initial filtering. For example, in one embodiment, a forecast is not eligible for inclusion unless the security has 1) a minimum number of forecasts, 2) a minimum number of users that forecasted this stock, 3) a  
30          minimum number of dates forecasted against, 4) a minimum number of influence points represented, and/or a minimum percentage of points represented as compared to the total points from the community.

Figures 6 and 7 illustrate methods, according to one embodiment, allowing for the filtering of a plurality of forecasts. As discussed above, forecasts are received (Figure 6, step 402) and stored in an active forecast database 306 (step 404). In one embodiment, asset management engine 316 invokes forecast screening module 314 (step 406) to  
5 retrieve and filter the active forecasts in forecast database 306 (steps 408, 410 and 412). Figure 7 illustrates a method for filtering individual forecasts. In the embodiment shown, the portfolio manager has selected various securities, user and forecast attributes to screen against. As Figure 7 shows, each forecast is screened against a plurality of criterion (see steps 502-514) and stored in filtered forecast database 308 (step 516).

## 10 2. Weighting and/or Aggregation of Forecasts

As discussed above, individual forecasts as to a particular stock or specific market condition (e.g., interest rates or market indexes) are aggregated to yield an aggregate projected return. In one embodiment, individual forecasts are weighted and aggregated based in part on the level of influence associated with each forecast. In either  
15 embodiment, the aggregated forecasts are then used along with a plurality of parameters in a fund adjustment model to determine how the holdings of a financial portfolio are to be adjusted. In one embodiment, weighting and aggregation of forecasts is repeated for each stock or asset. Under one such embodiment, only the top 100 predicted performers, as indicated by each aggregated and weighted forecast, are used in  
20 calculating adjustments to the fund. In addition, Figure 16 illustrates a user interface allowing a manager of a portfolio to control fund management parameters related to the weighting and aggregation of forecasts. The particular embodiment of the user interface allows a manager to weight forecasts based on at least one attribute of a user's influence profile, such as influence points, and/or a rating of directional accuracy and/or consistency  
25 based on past inputs. In addition, the user interface also allows the manager to specify what forecasts will be aggregated in relation to the time horizon for the forecasted return. In one embodiment, forecasts relating to a particular security, but having varying projection times (e.g., two-weeks, 1-month, 3-months) are nevertheless aggregated as a function of the projected time horizon associated with the forecasts.

30 Figure 9 illustrates a method allowing for the weighting and aggregation of forecasts on a security-by-security basis. In one embodiment, asset management engine 316 retrieves filtered forecasts from filtered forecast database 308 and groups them based

on the security involved (Figure 9, step 702). As to each group of forecasts (see steps 704 and 706), asset management engine 316 weights each forecast in the group according to the influence profile of the user associated with the forecast (see steps 710 and 712). Asset management engine 316 then aggregates the weighted forecasts (step 714) and stores the result (step 716).

In one embodiment, asset management engine 316 aggregates forecasts for each security even though the forecasts contain different time horizons (e.g., 1 week, 1-month, 3-month, and 6-month time projections). In one form, a portfolio manager chooses a time horizon around which the forecasts are aggregated. Based on the selected time horizon, asset management engine adjusts each forecast depending on its corresponding time horizon. Since each individual forecast on a security is a prediction of a future price, there is an implicit prediction of the forecasted return over forecast period. Based on financial theory, security returns are log-normal; therefore, one embodiment of the present invention performs a logarithmic, weighted least squares regression where the weights are defined above and the independent variable is the days from the day of evaluation for each forecast and the dependent variable is the natural logarithm of the forecasted price. This produces an equation for a line that predicts the future natural logarithm of price. One embodiment uses a pre-selected time horizon to predict the specific natural logarithm of price and then transforms that to a straight price forecast using the exponential function. These price forecasts are compared against the current prices to produce the expected returns.

Investor	Forecast	Influence Points	Weighted Forecast Calculation	Weighted Forecast
A	+2	5,000	$2 \times (5,000/38,000)$	+0.263
B	-1	3,000	$(-1) \times (3,000/38,000)$	-0.079
C	+3	20,000	$3 \times (20,000/38,000)$	+1.579
D	-0.5	10,000	$(-.5) \times (10,000/38,000)$	-0.131
Totals		38,000		1.632

Table 3

Table 3 provides an illustrative example. In one embodiment, the forecasts relating to a specific stock are weighted and combined to yield an aggregate forecast for that stock. As Table 3 shows, each individual forecast is weighted according to the influence associated with the forecast. In the embodiment shown in Table 3, influence is measured in points. Accordingly, investor A's forecast is weighted based on the number of influence points associated with the forecast over the total number of influence points associated with all forecasts related to that specific stock. In one embodiment, the influence associated with a forecast are the total influence points held by a user. In another embodiment, the influence points associated with a forecast is an amount allocated or bid by the user. In another embodiment, a predetermined amount of points is allocated to each forecast. As Table 3 shows, the aggregate forecast predicts an increase of 1.632 to the price of the stock or asset. If the current stock price in the example of Table 3 were 5, for example, the aggregate forecasted increase in the price of the stock is approximately 33 percent ( $1.632/5$ ). As discussed below, in one embodiment, this aggregate forecast is used to calculate an expected return on the security. The expected return for this and other securities or assets is then used in a fund adjustment model to determine the appropriate mix of assets for the fund.

### 3. Weighting of Suggested Adjustments

In addition, suggested adjustments submitted by users can be similarly weighted. In one embodiment, after each user's influence has been adjusted based on the previous round of inputs, a program will be run to create an overall recommendation for the holdings of the fund. In one embodiment where influence is represented by points, each user's suggested adjustments to the fund are multiplied by the percentage of the total influence points held by that user. For example, if investor A recommends buying 1000 shares of M Corporation and he has 0.1% of the influence point holdings in the fund, the weighted recommendation from investor A in the overall fund adjustment is to purchase 1 share of M Corporation ( $.001 \text{ influence} \times 1000 \text{ shares} = 1 \text{ share}$ ). This algorithm is applied to all of the investment recommendations of all investors that hold some number of influence points. The net result is a single set of buy/sell recommendations.

### 4. Fund Adjustment Model

As discussed above, the fund adjustment model receives inputs (e.g., forecasts, suggested adjustments, etc.) and determines how the holdings of the fund are to be

adjusted. The fund adjustment model can be any suitable model for adjusting the holdings of an investment fund. In one embodiment, the fund adjustment model incorporates a mathematical algorithm which receives, *inter alia*, weighted user input and calculates adjustments to the fund. In one embodiment, the fund adjustment model optimizes the mix of assets of the fund to maximize expected return of the portfolio. Additional inputs into the fund adjustment model can include, but are not limited to, 1) measure of risk (in one embodiment, this is the observed or predicted variance of the asset); and 2) the co-variance between assets in the fund. In another embodiment, the net change in money or cash invested into the fund is another input into the fund adjustment model. Yet other parameters may include minimum purchase amount thresholds and maximum purchase amount thresholds. Still other inputs can include predicted market conditions, such as interest rate or market index predictions (see section II.A.1., *supra*). In yet another embodiment, an additional parameter is the allocation between the user-input managed portion and a balancing factor or portion (such as an index or professionally managed fund). (See section II.D.4.c., *infra*.) In another embodiment, the fund adjustment model maximizes portfolio utility, where utility is a function of the risk and return, as well as transaction costs to achieve the portfolio.

Figures 17, 18, 19 and 20 set forth user interfaces facilitating the configuration of portfolio management parameters related to portfolio adjustment models and calculations. As the various figures show, a portfolio manager configures various portfolio management parameters to manage the calculation of adjustments to a financial portfolio. For example, Figure 17 provides a user interface allowing a portfolio manager to specify the risk-return model used in calculating recommended adjustments, as well as the minimum and maximum number of securities in a particular portfolio. Figure 18 provides an example of other portfolio management parameters that a manager may select and/or configure, such as the frequency with which recommended adjustments are calculated, constraints on the holdings of a portfolio. Figure 19 sets forth a user interface allowing a portfolio manager to set constraints related to market sectors. Figure 20 provides a user interface allowing a portfolio manager to configure a target range for the sensitivity of a portfolio to a particular market, such as the S & P 500.

Any investment fund portfolio optimization framework and/or equations can be incorporated into the fund adjustment model of the present invention. In one

embodiment, the fund adjustment model employs principles of modern portfolio theory and capital asset pricing models to determine a portfolio mix that meets the fund's targeted growth objective while minimizing risk. Suitable types of portfolio optimization frameworks include, but are not limited to, 1) the Markowitz' Mean-Variance Model (see, e.g., Rao, *Financial Management: Concepts and Applications* (South-Western College Publ. 1995)); 2) Portfolio Optimization using Stochastic Control Theory (see, e.g., Saunders, *Application of Optimization to Mathematical Finance* (Univ. of Toronto 1997) (available through Library of Canada); and 3) Mean-Lower Partial Moment Framework (see Rao, *The Regret Reward Model* (South-Western College Publ. 1995). See also James L. Davis, Eugene F. Fama, & Kenneth R. French, *Characteristics, Covariance, and Average Returns: 1929-1997*, (1999); Jason J. Karceski, Ph.D, *Essay 1: The Risk and Return from Factors; Essay 2: Forecasting Covariances for Portfolio Optimization; Essay 3: An Agency Explanation of the Book-to-Market Effect*, Univ. of Illinois at Urbana-Champaign (1997). As one skilled in the art will recognize, the Mean-Lower Partial Moment Framework covers a broad array of models that are targeted at minimizing downside risk. One specific model under this category is the Regret-Reward model where the regret is the regret for not investing in some other asset. A simplistic example would be the choice to put your money in a Certificate of Deposit or invest in a mutual fund. Since the Certificate of Deposit has negligible risk, you would expect to get a premium investing in a mutual fund where you take on risk. This framework measures your risk of not attaining at least that level of return (your regret for not taking the other investment) and then sets equations that need to be maximized to ensure that you get a premium for investing in the riskier investment. (See, e.g., Winston et al., *Practical Management Science: Spreadsheet Modeling and Applications* (Wadsworth Publ. 1997)).

In one embodiment, the fund adjustment model finds an optimal solution for the framework/equations listed above. This optimization has also been referred to as scenario optimization. In one embodiment, the optimal solution maximizes expected return given a certain level of risk ("such as regret") or minimizes risk and achieves a target level return. In another embodiment, the fund adjustment model maximizes a utility function that reflects risk-return tradeoff, as well as other factors, such as transaction costs and tax consequences.

a. Forecasts and Projections

In one embodiment, the fund adjustment model receives weighted and/or aggregate forecasts and calculates adjustments to the fund based, at least in part, on these aggregate forecasts. As alluded to above, these forecasts include stock price projections, as well as forecasts relating to overall market conditions. In one embodiment, user forecasts are aggregated and weighted (see section II.D.2., *supra*) and used to calculate an expected return on the security. The calculated expected return is then used in a fund adjustment model (see section II.D.4., *infra*).

Additionally, some embodiments of the present invention determine whether the adjustments calculated by the fund adjustment model are consistent with the objectives and/or charter of the fund as expressed through fund parameters. For example, the fund adjustment model will round the calculated adjustments to a minimum threshold quantity to prevent the creation of a highly fragmented fund having very small quantities of many stocks or assets. In another embodiment, if a calculated adjustment does not exceed a minimum threshold of shares, for example, the calculated adjustment as to that stock will not be implemented. The exact parameters and rules applied by this aspect of the fund adjustment model can be tuned to keep the holdings of the fund below a maximum number of different assets (in one embodiment), or restrict the holdings of the fund to some characteristic or requirement based on the fund's goals and/or charter (e.g., maximum or minimum price-to-earnings ratios, specific sectors or markets).

1) Implied Factor Returns and Stock-Specific Excess Returns

In one embodiment, asset management engine 316, based on aggregated forecasts received from the community, calculates implied factor returns and stock-specific excess returns for further use in a fund adjustment model. For example and in one embodiment, once user inputs are aggregated to produce a forecasted return per stock for the selected time horizon (see section II.D.2., *supra*), the process of determining the preferred investments (as they relate to stock specific alphas - i.e., expected excess return potential) from the group of forecasted stocks is initiated. Based on a single or multiple factor risk-return model, asset management engine 316 loads the factor sensitivities (coefficients) that have been pre-calculated and stored in a risk model database for the risk-return model, the specified time period and the return frequency. In one embodiment, these elements were preselected by a portfolio manager using the interfaces



described above. Asset management engine 316 then determines what the collective forecasts imply about the specific factor returns and what remains unexplained by a set of factor returns. This separates the absolute forecasts to factor relative forecasts and produces a set of expected factor returns (one for each factor in the risk model) and a set of implied stock-specific excess returns (one per security). By creating this distinction, the portfolio manager, using the user interfaces described above, can then choose to weight calculated adjustments to a financial portfolio towards specific factor expectations and/or specific excess return expectations - either based solely on the input from the community and/or based on external factors and/or return forecasts.

In the simplified case of a single factor market model (e.g.,  $\text{return} = \text{risk free rate} + \text{beta} * (\text{expected market return} - \text{risk free rate}) + \text{excess return}$ ), the aggregate forecasted returns are compared against the current risk free rate (forward looking for the time horizon of the forecasts) and the factor coefficients (betas) for each security. Thus, the factor return is a spot forecast for the risk premium in the marketplace (the expected return on the market less the risk free rate) and the stock specific excess return is a prediction of which securities will outperform the market on a risk adjusted basis. Of course, multi-factor models incorporating other commonly used market factors (e.g., volatility, momentum, size, growth, book-to-market effect, etc.).

Many methods can be used to calculate the implied factor returns and the returns unexplained by those factor returns and stock-specific factor coefficients. One such method employs a quadratic programming algorithm that seeks to minimize the market capitalization weighted sum of squared residual (excess) returns using the stock specific forecasts as the dependent variable and the factor returns as the independent variables that will be calculated via quadratic programming. This method selects a set of factor returns that minimizes the unexplained residual returns (excess returns/alphas) in the market. With the calculated factor returns, excess or residual return for a particular security can be determined by reference to the risk-return model employed. Other methods to calculate the implied factor returns and stock specific excess returns can include linear and non-linear programming, weighting the residuals by other factors (such as the sum of points the community has placed against the forecast or the degree of predictive accuracy the community has demonstrated historically on forecasting the specific security), utilizing a non-weighted residual where all securities have equal

influence in determining the factor returns and could incorporate advanced techniques for data analysis such as neural networks and genetic algorithms.

The framework discussed above allows for successful decision making based on the quality of the aggregated forecasts. These calculations produce an estimate of factor returns and stock-specific excess returns that facilitate making decisions on when excess returns available in the market would exceed the transaction costs (e.g., market impact, capital gains treatment and commission costs) to benefit from those returns. In one embodiment, interactive portfolio management site 30 markets the estimates of absolute returns for securities (as predicted by the aggregated community), factor returns and market returns (i.e., the market risk premium), as well as stock-specific excess return (e.g., stock-specific alphas). In one embodiment, interactive portfolio management site 30 further uses the calculations described above to calculate adjustments to a financial portfolio, such as a mutual fund or individually owned portfolio.

## 2) Fund Adjustment Involving Implied Factor Returns and Stock-Specific Excess Returns

Once the factor returns and associated relative returns have been estimated, asset management engine 316, in one embodiment, constructs a quadratic programming problem that seeks to maximize the total utility for a portfolio. See Lobo et al., *Portfolio Optimization with Linear and Fixed Transaction Costs and Bounds on Risk*, Information Systems Laboratory, Stanford University (1999). The utility function captures the relationship between risk and return via a risk tolerance factor and therefore selects the best portfolio to maximize this risk-return tradeoff. In addition, the utility function, in one embodiment, includes estimates of transaction costs such that any trade recommended (including round trip trades - the sale of one security to purchase another) will consider the cost to achieve that trade (i.e. - a specific tax efficiency level for the portfolio, the commission cost structure and the market impact including bid/ask spread and potential for the trade to set price in the market). This utility function, in one embodiment, applies for both the selection of the initial portfolio and changes to the portfolio over time.

The user interface allows for additional measures of controlling risk and managing returns including integrating specific factor loadings (based on the community and/or pre-selected), controlling sector and industry exposure (absolute or relative to a benchmark), pre-filtering securities based on market and fundamental variables (for the

entire portfolio or a portion of the portfolio), weighting the portfolio (or a fraction of the portfolio) towards specific fundamental variables, managing the cash component level of the portfolio and excluding stocks either recently sold from the portfolio and/or for a host of reasons including (compliance, user preference, etc).

5           The output of asset management engine 316 is displayed via the user interface (see below) and, upon review and approval, the interface facilitates calculation of the required trades necessary to implement the portfolio and provides an interface for the communication to and from a trade desk (see Figure 21 and section II.D.5., *infra*) that utilizes separate menus/screens on the interface to record the trades and communicate  
10       with the user that approved the portfolio.

b.       Suggested Adjustments

          In another embodiment, the fund adjustment model receives weighted, suggested recommendations and calculates actual adjustments to the fund. As discussed above, the fund adjustment model, in one embodiment, will round the calculated adjustments to a  
15       minimum threshold quantity. In another embodiment, the parameters and rules applied the fund adjustment model are configured to restrict the holdings of the fund to some maximum number of different assets, or restrict the holdings of the fund to some characteristic or requirement based on the fund's goals and/or charter (e.g., maximum or minimum price-to-earnings ratios, specific sectors or markets). In yet another  
20       embodiment, the aggregated suggested adjustments to the fund are run through a fund adjustment model that determines an optimal strategy for implementing the adjustments.

c.       Balance User-Input Control Against Market Index or Professional Fund Manager

          In one embodiment of the present invention involving mutual funds managed by  
25       interactive portfolio management site 30, influence over calculated adjustments to the fund are balanced between user input and a market index or a professional fund manager. Figure 4 illustrates an embodiment of this aspect of the present invention. In one embodiment, the holdings of the fund are divided between holdings corresponding to an index and holdings adjusted based in part on user input. During the life of the  
30       fund, the performance of the index is evaluated against the performance of user input (Figure 4, steps 216, 218 and 222). The allocation between the two factors is adjusted based upon the performance differences (Figure 4, step 222). For example, if after a

predetermined amount of time, the index out performs user input, then the allocation is adjusted in favor of the index. In one embodiment, this adjustment in allocation can be a stepped adjustment, for example, of 5 percent. On the other hand, if user input out performs the index, then the allocation is adjusted in favor of user input. In one  
5 embodiment, this allocation is another parameter in the fund adjustment model which calculates the necessary adjustments to the fund. In yet another embodiment, the fund of the present invention may also be balanced against a competing set of users.

#### 4. Frequency of Adjustments

The frequency of adjustments to a financial portfolio, such as a mutual fund,  
10 depends on the goals and desired characteristics of the portfolio and, in some embodiments, on the occurrence of a portfolio management condition. In embodiments involving a mutual fund, the fund can be adjusted at regular intervals or at intervals determined by a fund manager. In one embodiment, the fund is adjusted on a daily  
15 basis. In one embodiment, adjustments to the fund are implemented at the end of the trading day. The adjusted fund holdings become the new baseline for the next round of calculated adjustments. In other embodiments, the fund is adjusted on a weekly or semi-monthly basis. Of course, any interval of time between adjustments can be used, including hours. As discussed above, in one embodiment, portfolio tracking engine 318  
20 monitors the status of a portfolio against portfolio management parameters to determine whether the portfolio has exceeded a portfolio management parameter (i.e., a portfolio adjustment condition) (see Figure 3, step 116). For example, if the price of a particular security has increased to the point where a particular fund's percentage holdings in that security exceeds a threshold level specified by the portfolio manager, portfolio tracking  
25 engine 318, in one embodiment, notifies the portfolio manager who initiates another round of calculated adjustments. This same notification methodology can also be applied to individual investment portfolios.

#### 5. Execution of Suggested Adjustments

Adjustments to a portfolio can be executed in a variety of manners. In one  
embodiment, adjustments calculated by asset management engine 316 are automatically  
30 implemented via electronic trading functionality. In one embodiment, interactive portfolio management site 30 provides managers a level of control over executing trades. In one embodiment, interactive portfolio management site 30 provides a user interface

detailing the adjustments calculated by asset management engine 316 and allows the portfolio manager to confirm the adjustments before sending them to a trade desk or department for execution of the trades that implement the adjustments. For example, Figure 21 sets forth a user interface detailing the suggested adjustments calculated by asset management engine 316 and allows the portfolio manager to send the adjustments to a trade desk for execution. In one embodiment, the fund manager can change one to a plurality of fund management parameters and rerun the calculation of adjustments a desired number of times before directing that any trades be executed.

E: Mutual Fund Initialization Using Influence Points

As with any mutual fund, at the outset, there is no historical record of success or failure and, therefore, there is no way to initially allocate influence points. As discussed above, the initial allocation of influence points can be based on the amount of money invested in the fund. Certain embodiments of the present invention, however, contemplate alternative protocols for initializing the fund. These protocols also have an added feature of providing a measure of stability to the fund.

1. Index Fund

In one embodiment, the fund according to the present invention begins as an indexed fund (e.g., S&P 500) (hereinafter "the *Index*"). According to one form of this embodiment, the *Index* itself is actually a voting "user" with a set of holding recommendations that mimic the index. In one embodiment, the *Index* holds all of the influence points at initialization and only loses influence points to other users as those users show that they can beat the *Index* over time.

Under this embodiment, the *Index* can be a lasting element of the fund. For example, if investors lose to the *Index*, the *Index* gains influence which eventually brings the holdings of the fund back in line with the *Index*. This embodiment provides both an initialization mechanism, as well as a method for moderating risk on the holdings of the fund. This embodiment also effects a performance floor which is at or just below the performance of traditional index funds.

2. Professional Manager

In another embodiment, a fund manager starts out holding all of the influence at initialization. From the day the fund begins operation, this fund manager is in direct competition with all of the other users in the fund. As with the *Index*, the fund manager

may be an enduring element of the fund or, would eventually be phased out as he or she loses influence over the fund to users with proven performance histories. In an alternative embodiment, the fund manager permanently retains some amount of influence to provide a moderating influence on the fund's holdings and to execute trades that require market timing, that is not in line with the timing of the fund's voting cycle (i.e. a trade should be executed today based on very current market data that was not available to investors when they made their forecasts, so the fund manager, in one embodiment, is empowered to act quickly).

With respect to the above-provided description, one skilled in the art will readily recognize that the present invention has application in a variety of contexts. The foregoing description illustrates the principles of the present invention and provides examples of its implementation. For example, although a preferred embodiment is described as working in conjunction with an Internet browser, the present invention may be used in connection with any suitable software application for accessing files on a computer network. Moreover, one skilled in the art will readily recognize that the implementation details and parameters of operation can be widely varied to achieve funds suitable for many different objectives. Accordingly, the description is not intended to limit the scope of the claims to the exact embodiments shown and described.

## CLAIMS

What is claimed is:

1. A method for calculating adjustments to a financial portfolio, the method comprising  
5 the steps of:
  - (a) receiving, at a server, at least one user input from at least one user;
  - (b) filtering each user input against at least one criterion;
  - (c) aggregating the user inputs filtered in step (b) to yield an aggregate forecasted  
return on at least one security; and,
  - 10 (d) calculating adjustments to a financial portfolio based in part on the aggregate  
forecasted returns calculated in step (c).
2. The method of claim 1 wherein the financial portfolio is a mutual fund portfolio.
3. The method of claim 1 wherein the financial portfolio is a personal investment  
portfolio.
- 15 4. The method of claim 1 further comprising the steps of
  - (e) executing trades to implement the adjustments calculated in step (d).
5. The method of claim 1 further comprising the steps of
  - (e) receiving at least one portfolio management parameter, the portfolio  
management parameters operable to specify a portfolio adjustment condition;
  - 20 (f) adjusting the financial portfolio; and,
  - (g) monitoring the status of the financial portfolio as market conditions change to  
determine the occurrence of a portfolio adjustment condition.
6. The method of claim 5 further comprising the steps of
  - (h) transmitting a notification to the manager of the portfolio when an  
25 element/characteristic of the financial portfolio exceeds a portfolio management  
parameter.
7. The method of claim 1 wherein the criterion is a portfolio management parameter  
specified by a portfolio manager, and wherein the portfolio management parameter is  
operable to control the filtering of forecasts in step (b).
- 30 8. The method of claim 1 wherein the aggregating step (c) comprises the steps of
  - (c1) weighting the user inputs according to at least one factor; and
  - (c2) aggregating the user inputs to yield a weighted aggregate forecasted return.

9. The method of claim 8 wherein the factor is the past performance of previous user inputs of the user associated with the user input received in step (a).

10. A method for calculating adjustments to a financial portfolio, the method comprising the steps of:

- 5           (a) receiving, at a server, at least one user input from at least one user;  
            (b) filtering each user input against at least one criterion;  
            (c) weighting each remaining user input;  
            (d) aggregating the user inputs weighted in step (b) to yield a weighted, aggregate  
forecasted return on at least one security; and,

10           (e) calculating adjustments to a financial portfolio based in part on the aggregate  
forecasted returns calculated in step (d).

11. The method of claim 10 wherein each investment input weighted in step (b) is  
weighted based on a level of influence associated with the user.

12. The method of claim 10 wherein each investment input weighted in step (b) is  
15 weighted based on a portion of a level of influence bid by the user.

13. The method of claim 10 further comprising the steps of

- (f) receiving at least one portfolio management parameter, the portfolio  
management parameters operable to specify a portfolio adjustment condition;  
            (f) adjusting the financial portfolio; and,

20           (g) monitoring the status of the financial portfolio as market conditions change to  
determine the occurrence of a portfolio adjustment condition.

14. The method of claim 10 wherein the financial portfolio is a mutual fund portfolio.

15. The method of claim 10 wherein the financial portfolio is a personal investment  
portfolio.

25 16. The method of claim 10 further comprising the steps of

- (f) executing trades to implement the adjustments calculated in step (e).

17. The method of claim 11 wherein the level of influence associated with each user is  
determined in relation to the performance of past user inputs corresponding to the user.

18. The method of claim 17 further comprising the steps of

- 30           (f) evaluating the performance of user inputs submitted by each user; and,  
            (g) adjusting the level of influence associated with each user based on the  
evaluating step (f).



19. The method of claim 13 further comprising the steps of

(h) transmitting a notification to the manager of the portfolio when an element/characteristic of the financial portfolio exceeds a portfolio management parameter.

5 20. The method of claim 10 wherein the criterion is a portfolio management parameter specified by a portfolio manager, and wherein the portfolio management parameter is operable to control the filtering of forecasts in step (b).

21. A method for using a server to calculate adjustments to a financial portfolio, the server connected to a computer network, the computer network carrying and routing data  
10 between the server and at least one user computer associated with one or more users, the method comprising the steps of:

(a) receiving, at the server, at least one portfolio management parameter from a portfolio manager;

(b) receiving, at the server, at least one user input from at least one user;

15 (c) filtering each user input against at least one criterion;

(d) weighting each remaining user input;

(e) aggregating the user inputs weighted in step (b) to yield a weighted, aggregate forecasted return on at least one security; and,

20 (f) calculating adjustments to a financial portfolio based in part on the aggregate forecasted returns calculated in step (d).

22. The method of claim 21 wherein the portfolio management parameter is operable to control the filtering of user input in step (c).

23. The method of claim 21 wherein the portfolio management parameter is operable to control the weighting of user inputs in step (d).

25 24. The method of claim 21 wherein the portfolio management parameter relates to the aggregation of user inputs in step (e).

25. The method of claim 21 wherein the portfolio management parameter is operable to influence the calculation of adjustments in step (f).

30 26. The method of claim 21 wherein the portfolio manager is a registered investment advisor managing at least one mutual fund.

27. The method of claim 21 wherein the portfolio manager is a user managing at least one personal investment portfolio.

28. A method for facilitating the calculation of adjustments to a financial portfolio, the method comprising the steps of:

- (a) receiving, at a server, at least one user input from at least one user;
- (b) aggregating the user inputs to yield an aggregate forecasted return on at least one security;
- (c) selecting a set of implied factor returns based in part on the aggregate forecasted returns calculated in step (b) and the factors in a risk-return model; and,
- (e) determining an excess return value for at least one security based on the set of implied factor returns.

29. The method of claim 28 further comprising the step of

- (f) calculating adjustments to a financial portfolio based in part on the excess return value(s) calculated in step (e).

30. The method of claim 28 or 29 further comprising the step of

- filtering each user input against at least one criterion, before the aggregating step (b).

31. The method of claim 28 or 29 wherein the aggregating step (b) comprises the steps of

- (b1) weighting the user inputs according to at least one factor; and
- (b2) aggregating the user inputs to yield a weighted aggregate forecasted return.

32. The method of claim 31 wherein the factor is the influence profile of the user associated with the user input.

33. A method allowing for calculation of adjustments to a financial portfolio, the method comprising the steps of:

- (a) receiving, at a server, at least one investment input from at least one user, the investment input relating to a projected return on a security;

- (b) weighting each investment input;
- (c) as to each security, aggregating the investment inputs weighted in step (b) to yield a weighted, aggregate forecasted return;

- (d) selecting a set of implied factor returns based in part on the investment inputs aggregated in step (c) and the factors in a risk-return model;

- (e) determining an excess return value for at least one security based on the set of implied factor returns; and,

(f) calculating adjustments to a financial portfolio based in part on the excess return value(s) calculated in step (e).

34. The method of claim 33 wherein the selecting step (d) comprises the steps of

5 (d1) selecting the set of implied factor returns that minimizes the sum of the absolute excess return values among the securities identified in the investment inputs aggregated in step (c).

35. The method of claim 33 wherein the selecting step (d) comprises the steps of

10 (d1) selecting the set of implied factor returns that minimizes the sum of the squares of the excess return values among the securities identified in the investment inputs aggregated in step (c).

36. The method of claim 33 wherein the selecting step (d) comprises the steps of

(d1) selecting the set of implied factor returns that minimizes the weighted excess return among the securities identified in the investment inputs aggregated in step (c).

15 37. The method of claim 36 wherein the weighted excess return is weighted in relation to the market capitalizations of the respective securities.

38. The method of claim 33 wherein the determining step (e) comprises the step of

(e1) comparing the aggregate forecasted return for a security as weighted in step (c) to the implied factor returns and associated factor sensitivities for the security.

39. The method of claim 33 further comprising the step of

20 (g) filtering the investment inputs against at least one criterion, before the aggregating step (c).

40. The method of claim 33 further comprising the step of

(g) filtering the investment inputs against at least one criterion, before the weighting step (b).

25 41. The method of claim 33 wherein each investment input weighted in step (b) is weighted based on a level of influence associated with the user.

42. The method of claim 33 wherein each investment input weighted in step (b) is weighted based on a portion of a level of influence bid by the user.

30 43. A method allowing for adjustments to a financial portfolio, the method comprising the steps of:

(a) receiving at least one investment input from at least one user, the investment input relating to a projected return on a security;

(b) weighting each investment input based on a level of influence associated with the user;

(c) as to each respective security, aggregating the investment inputs weighted in step (b) to yield an aggregate projected return;

5 (d) selecting a set of implied factor returns based in part on the investment inputs aggregated in step (c) and the factors in a risk-return model, wherein the risk return model represents the dependency of the return on a security on at least one market factor and excess return,

10 (e) determining an excess return value for at least one security based on the set of implied factor returns selected in step (d); and,

(f) calculating adjustments to a financial portfolio based in part on the excess return value(s) calculated in step (e).

44. The method of claim 43 wherein the weighted investment factor is weighted in relation to the sensitivity of the particular security to the investment factor.

15 45. The method of claim 43 or 44 wherein the selecting step (d) comprises the step of

(d1) selecting the set of implied factor returns that minimizes the total excess return among the securities identified in the investment inputs aggregated in step (c).

46. A method for adjusting a financial portfolio, the method comprising the steps of:

20 (a) receiving at least one investment input from at least one user; the investment input relating to a projected return of a security;

(b) weighting each investment input based on a level of influence associated with the user;

(c) as to each respective security, aggregating the investment inputs weighted in step (b) to yield an aggregate projected return;

25 (d) selecting an implied market return based in part on the investment input aggregated in step (c) and a risk-return model;

(e) determining an excess return value for at least one security based on the implied market return and the risk-return model used in step (d); and,

30 (f) calculating adjustments to a financial portfolio based in part on the excess return value(s) calculated in step (e).

47. The method of claim 46 wherein the selecting step (d) comprises

= (d1) selecting the implied market return that minimizes excess return among the securities identified in the investment inputs aggregated in step (c).

48. An apparatus for calculating adjustments to a financial portfolio, the apparatus operably connected to a computer network, the computer network carrying and routing data between the apparatus and a plurality of computers, the computers each associated with one or more users, comprising:

a forecast database, the forecast database storing forecasts submitted by users;

a user profile database, the user profile database including user identifications each stored in association with corresponding influence profiles;

a portfolio parameter database, the portfolio parameter database including portfolio management parameters operable to control the screening of forecasts and/or the calculation of adjustments to a financial portfolio;

a forecast screening module, accessing the forecast database to filter forecasts against at least one portfolio management parameter stored in the portfolio parameter database; and

an asset management engine, the asset management engine aggregating forecasts stored in the forecast database to determine the aggregate projected return on at least one security and calculating adjustments to a financial portfolio based on the aggregate projected return(s).

49. The apparatus of claim 48 wherein the asset management engine weights forecasts based on the influence profiles of corresponding users stored in the user profile database, and wherein the asset management engine aggregates the weighted forecasts to determine the aggregate projected return on at least one security and calculates adjustments to a financial portfolio based on the aggregate projected return(s).

50. The apparatus of claim 48 or 49 further comprising

a portfolio management interface facilitating the entry, deletion and editing of portfolio management parameters stored in the portfolio parameter database.

51. A method for managing an investment fund, wherein said investment fund is allocated between a user-managed portion and balancing portion, said method comprising the steps of

(a) receiving a user input from at least one user;

(b) weighting the user inputs based partially on the influence of the corresponding user;

(c) adjusting the allocation between the user managed portion and the balancing portion;

5 (d) calculating adjustments to the investment fund using the weighted investment recommendation and the adjusted allocation;

(d) evaluating the user inputs; and

(e) adjusting the influence of the corresponding user based at least in part on the evaluation in step (d).

10 52. The method of claim 51 wherein the balancing portion is a market index.

53. The method of claim 51 wherein the balancing portion is professionally managed.

54. The method of claim 51 wherein the balancing portion is a second user-managed portion.

55. The method of claim 51 further comprising

15 (f) repeating steps (a), (b) and (d) a desired number of times.

56. The method of claim 51 wherein the adjusting step (c) is based in part on the past performance of the user managed portion and the balancing portion.

57. A method for managing an investment fund, wherein said investment fund is allocated between a user-managed portion and balancing portion, said method

20 comprising the steps of

(a) receiving input from a user;

(b) repeating step (a) a desired number of times;

(c) weighting each of the inputs based at least in part on the past performance of each respective user;

25 (d) adjusting the allocation between the user managed portion and the balancing portion relative to the past performance of the user managed portion and the balancing portion;

(e) calculating adjustments to the investment fund using the weighted inputs and the adjusted allocation;

30 (f) evaluating the inputs; and

(g) adjusting the influence of the corresponding users based at least in part on the evaluation in step (d).

- 58. The method of claim 57 wherein the balancing portion is a market index.
- 59. The method of claim 57 wherein the balancing portion is professionally managed.
- 60. The method of claim 57 wherein the balancing portion is a second user-managed portion.

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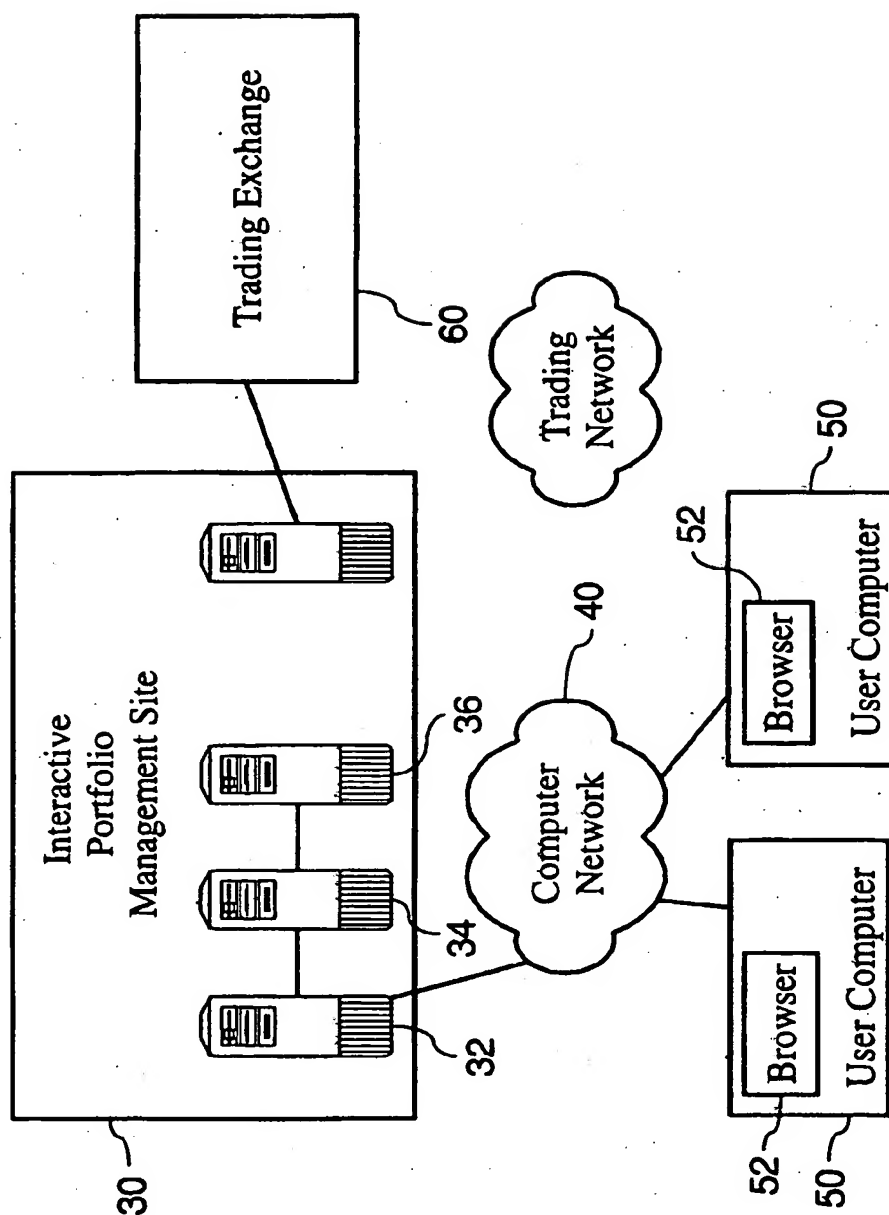


FIG. 1



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Welcome to fundUnrun.com: - Microsoft Internet Explorer

Address: www.fundUnrun.com

**fundUnrun.com**  
INTERACTIVEFUNDS, INC.

LOGIN ☐ **MY ACCOUNT** | [Vote](#) | [Holdings](#) | [Status](#) | [Profile](#) | [History](#) | [Service Center](#) | [What's New](#)

**Vote - Provide Forecast for Ebay**

August 16, 1999 09:32 PM - U.S. Markets Closed.

EBAY INC (Nasdaq: EBAY)						
Last Trade 4:00PM - 79 1/2	Change -3 1/2 (-4.35%)		Prev Cls 83 1/2	Volume 7,222,000	Div Date Mar 1	<p>EBAY 8-Aug-1999</p> <p>Small: ( 3d   5d   1yr   5yrs )</p> <p>Big: ( 3d   5d   2m   3m   1yr )</p>
Day's Range 76 1/2 - 85 1/2	Bid 79 1/2	Ask 78 1/2	Open 83 1/2	Avg Vol 4,123,854	Ex-Div Mar 2	
52-week Range 8 1/2 - 234	Earn/Shr 0.01	P/E 8325.00	Mkt Cap 9.9728	Div/Shr N/A	Yield N/A	

3) Given the current price listed above what do you think the price will be in:

2 Weeks:  102  104

3 Months:

6 Months:  106

How many points do you bid against this forecast?

OR  % of my Total points

108 110

My Computer

100

FIG. 2

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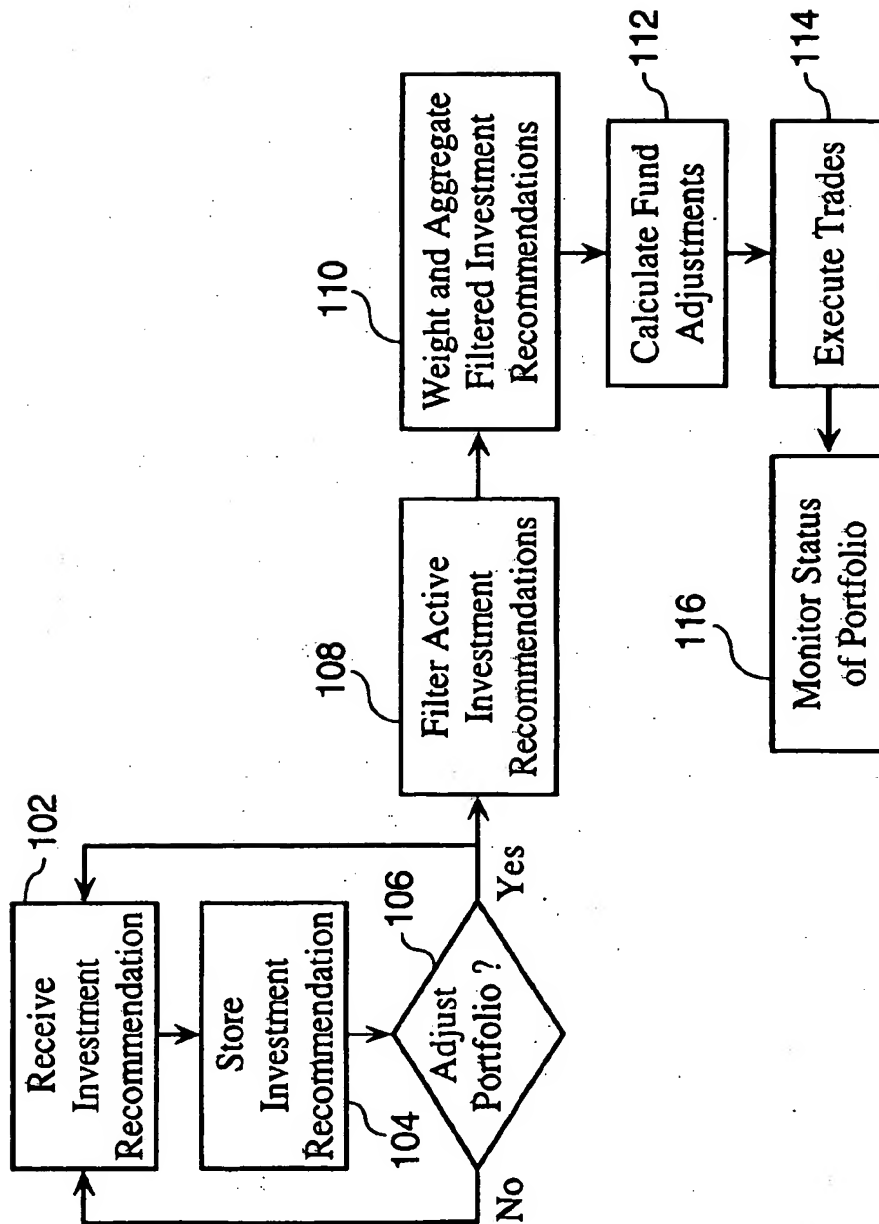


FIG. 3

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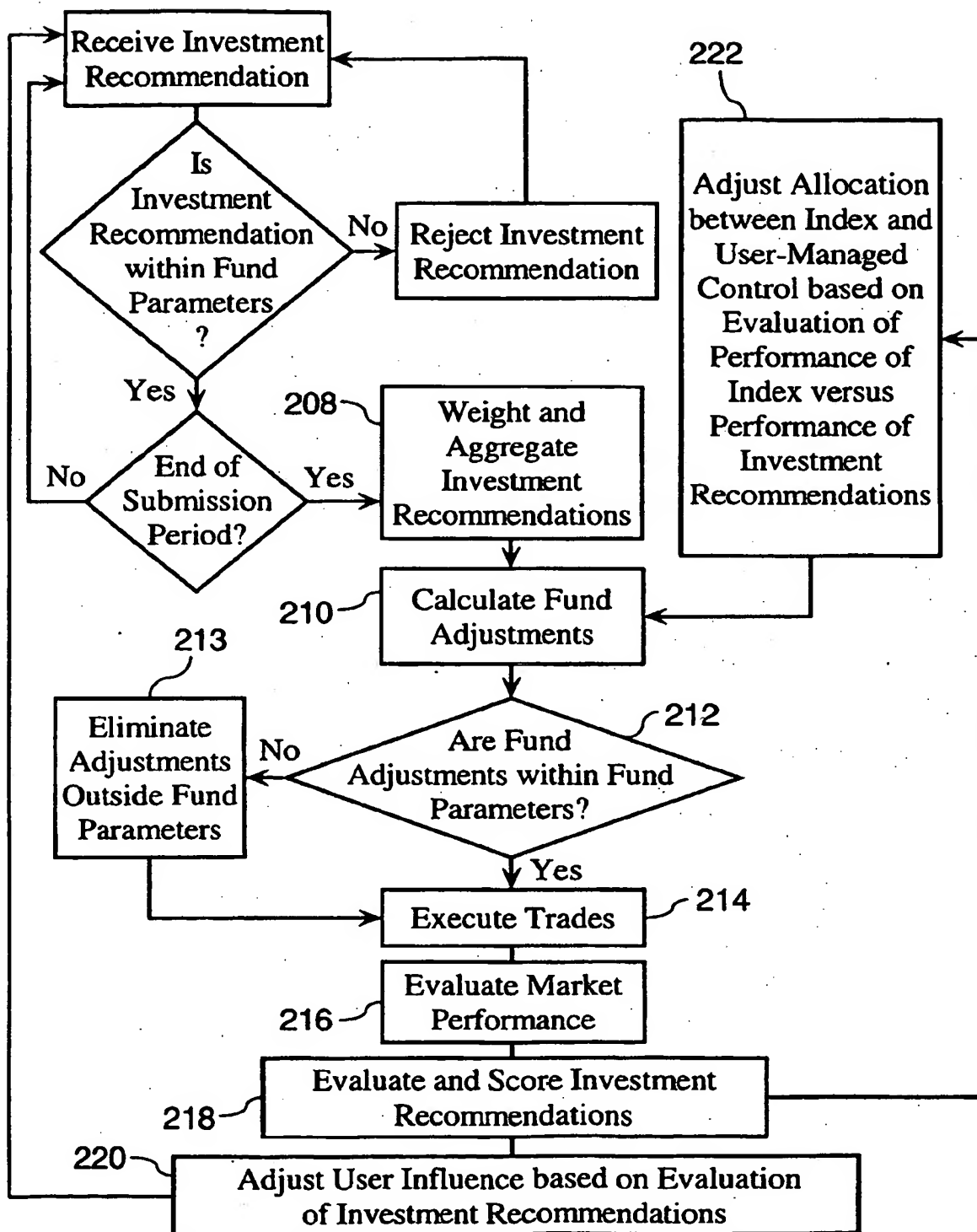


FIG. 4

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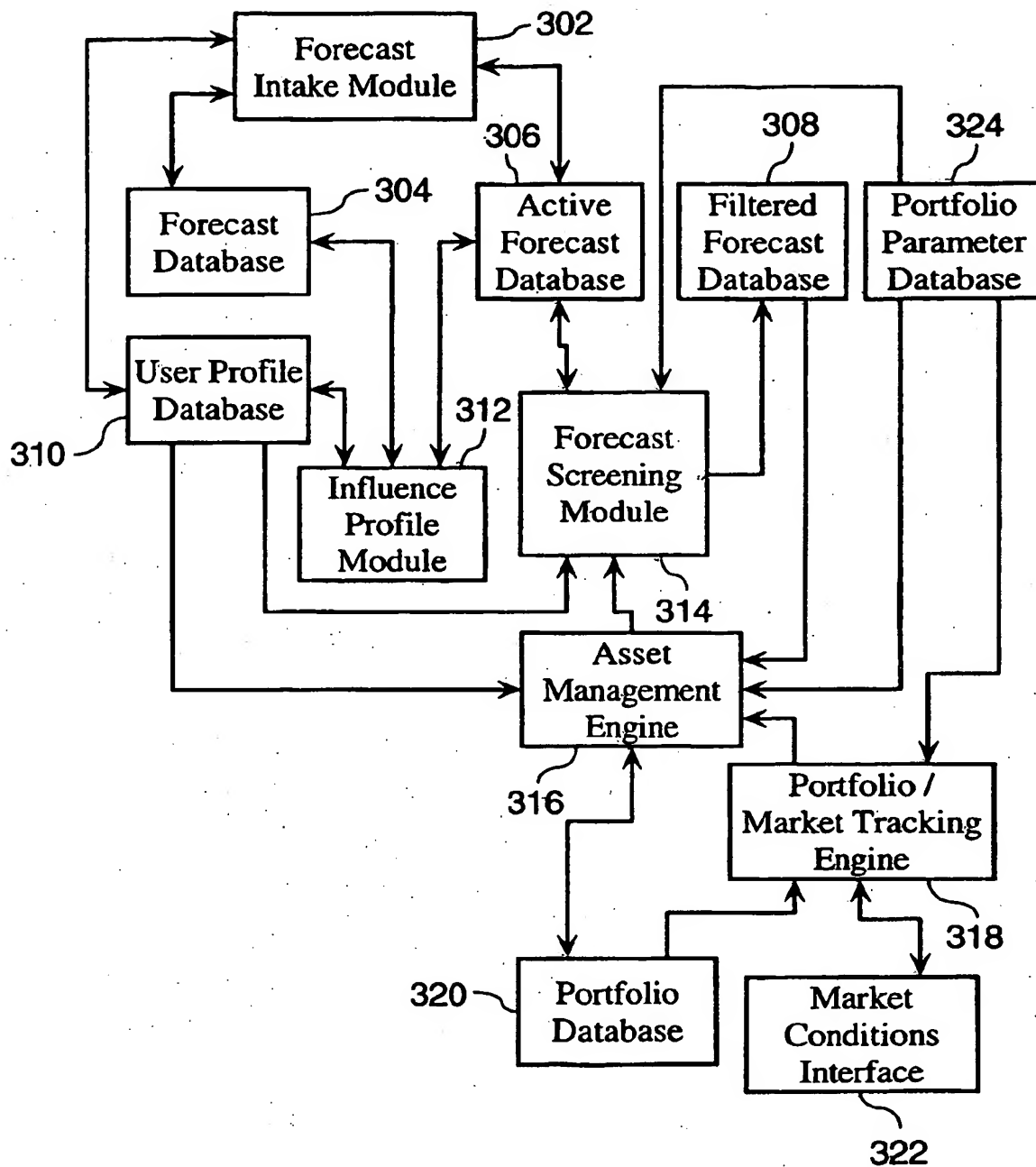


FIG. 5

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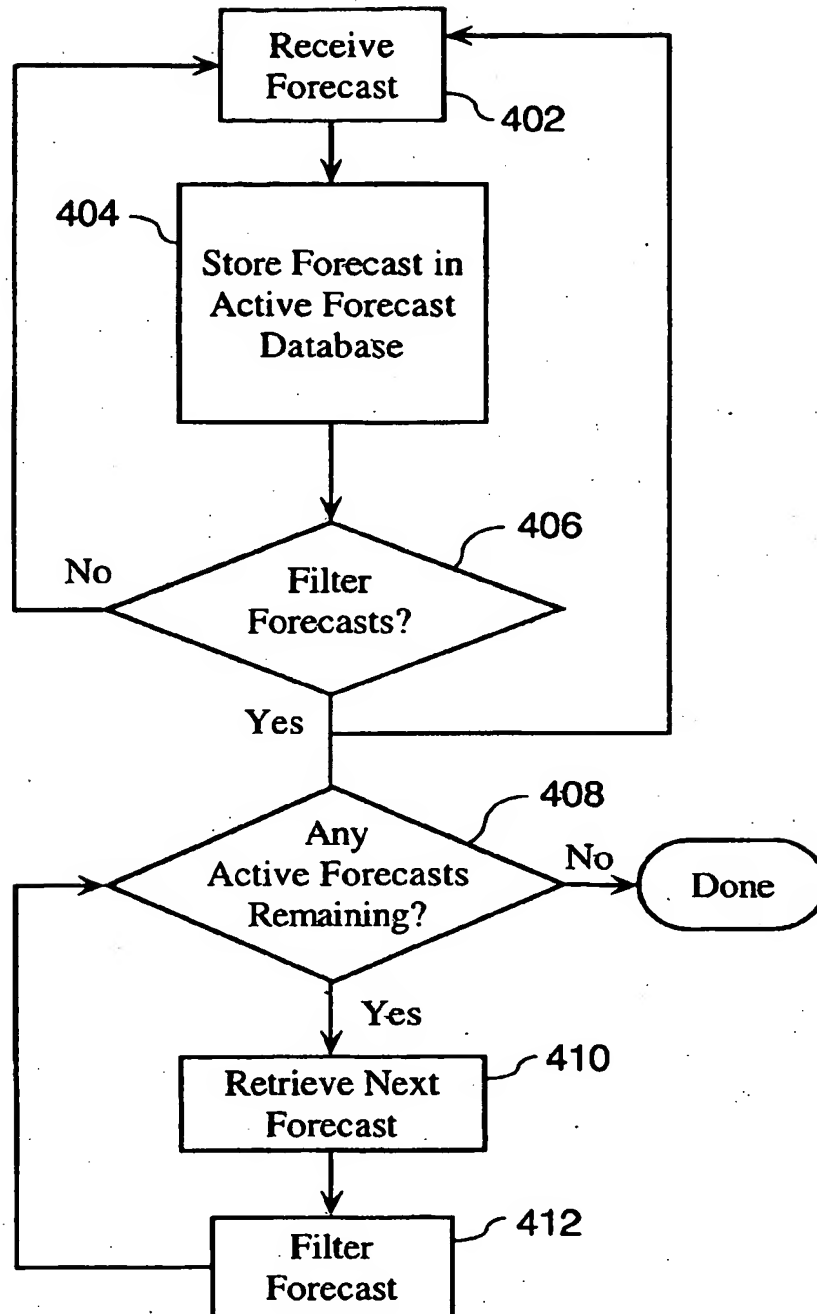
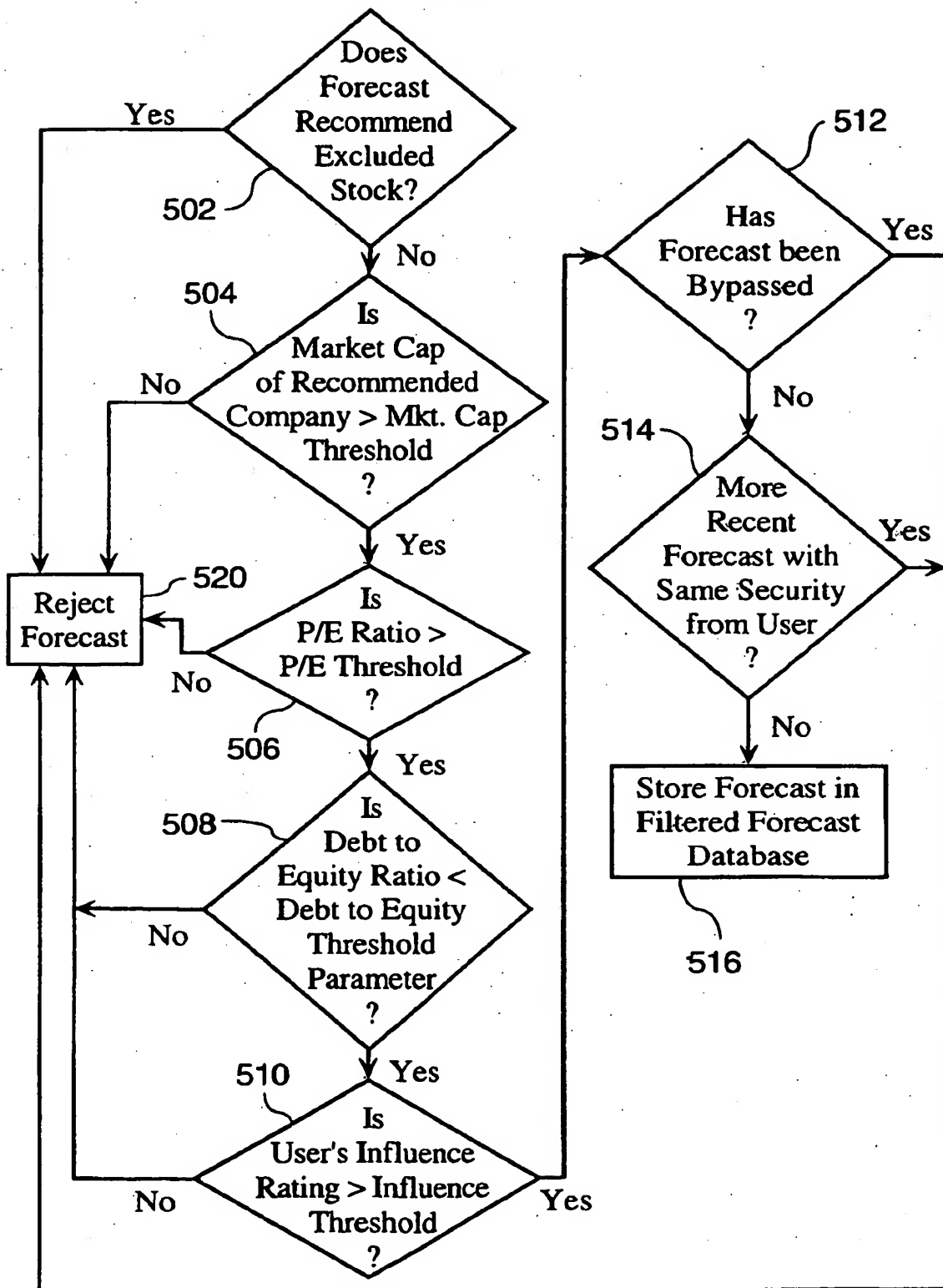


FIG. 6

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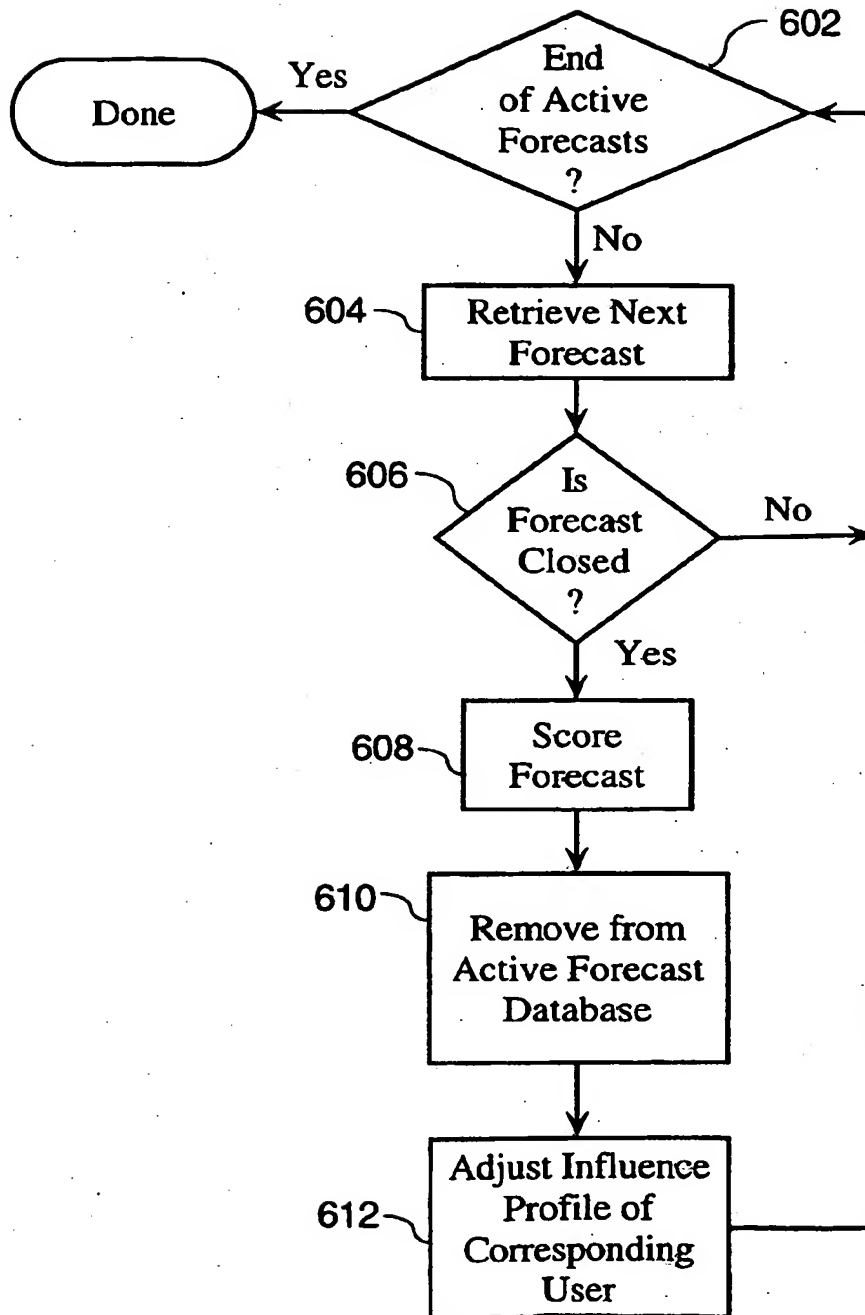


FIG. 8

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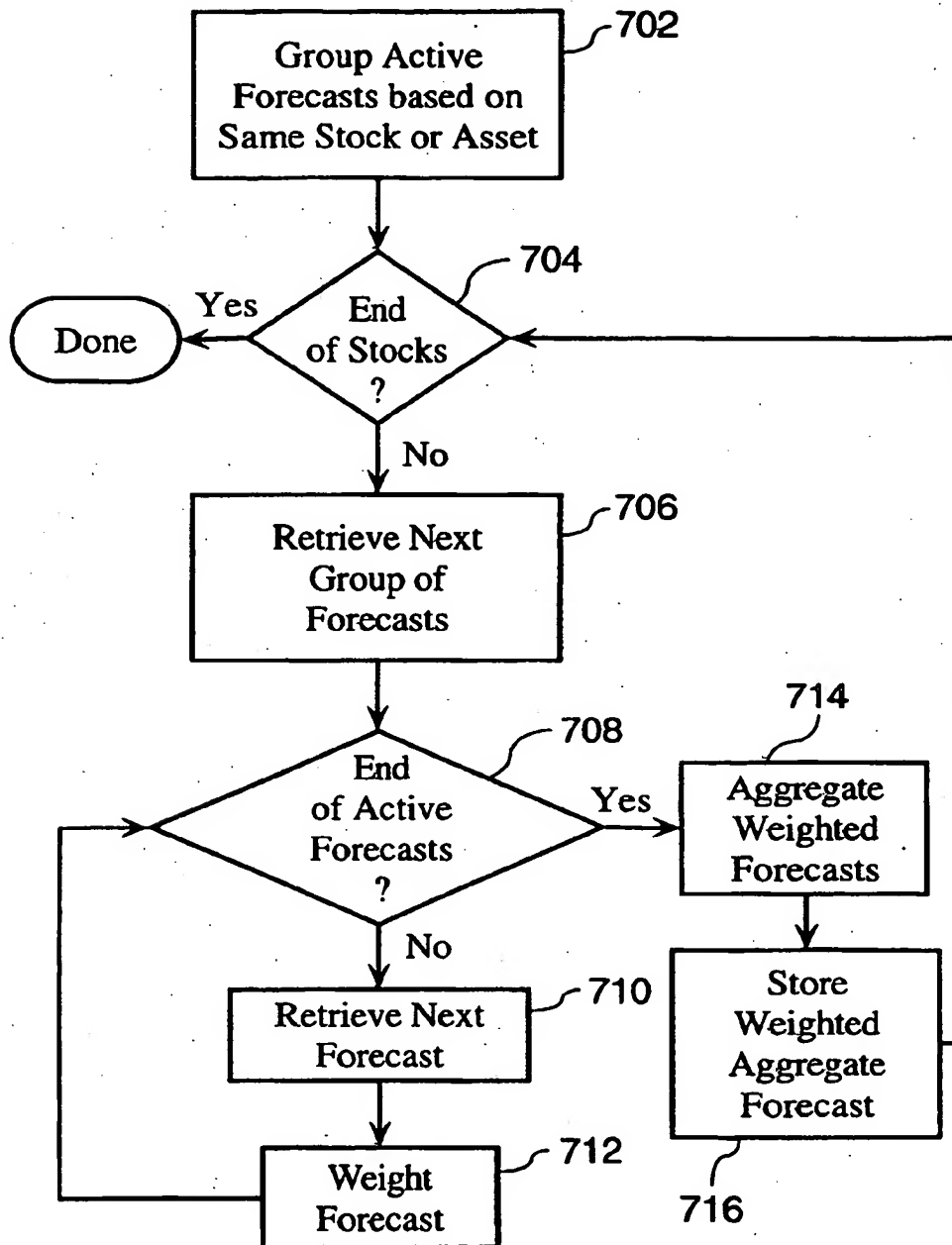


FIG. 9



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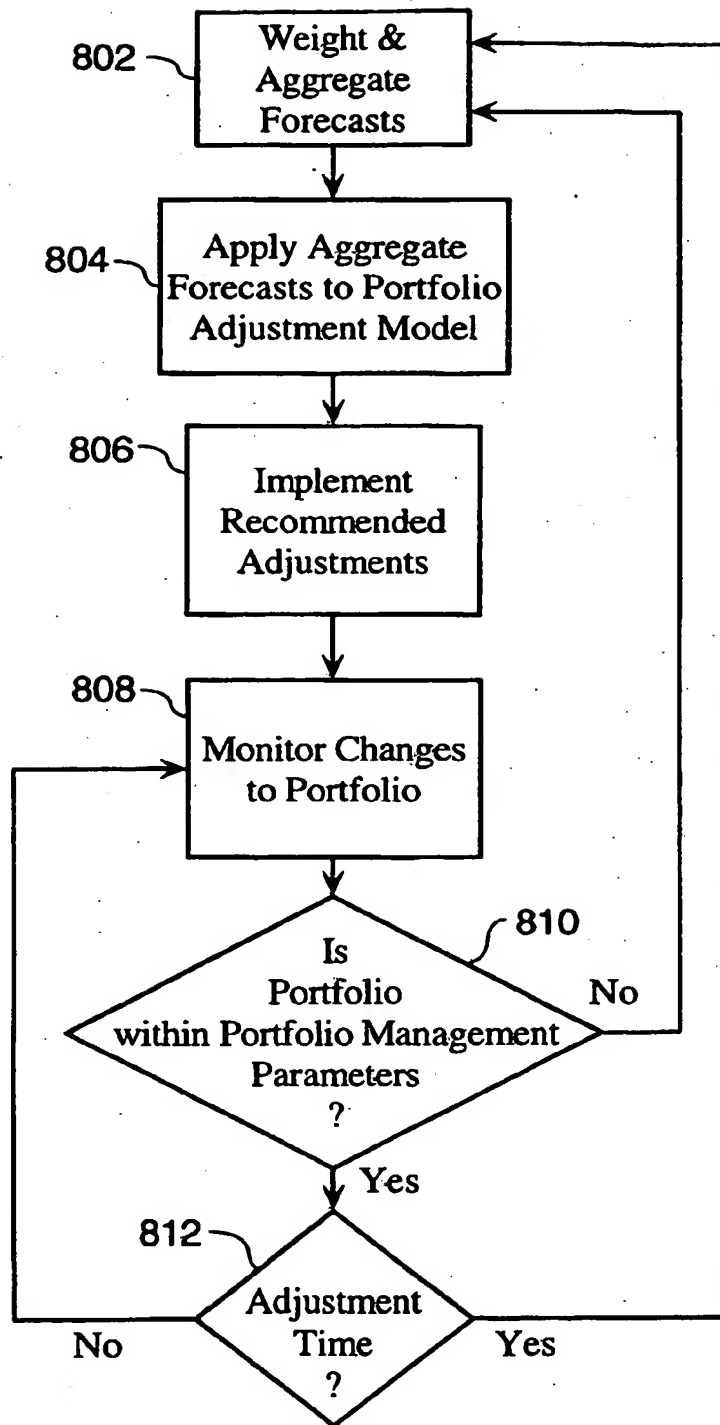


FIG. 10

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InteractiveFunds.com: Security Fundamentals Screener - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Refresh Home Search Favorites History Mail Print Edit Discuss

Address http://prod:8080/fpmn/stock\_screener.tcl

InteractiveFunds Home | Help LOG OUT

Fund 1 Change Fund

**Investment Style**

Settings Summary

Preddefined

Custom

Benchmark

Stock Universe

Sector Weighting

Risk/Diversification

Excluded Stocks

**Virtual Analyst**

Screener

Forecasts

Analyst

Security

Aggregator

**Asset Management**

Current Portfolio

Optimize/Rebalance

Recommendations

Require Trades

Trade Validation

Trade Placement

**Rebalance Monitor**

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**Add New Stock Screen**

1. Select a security attribute:  
Debt/Total Capital

2. Set the constraint on laht attribute:  
greater than

3. Set limitations on applying the constraint

☒ % of the securities in the portfolio must meet the constraint

☐ The portfolio mean must meet the constraint

Add

**Current Screens**

☐ Market Cap (\$mil) 100 % of Portfolio > 100

Delete

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FIG. 11

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Interactivelfunds.com: Exclude Stocks - Microsoft Internet Explorer

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Address http://prod:8080/pmm/exclude\_stocks.tcl

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**Investment Style**  
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Stock Universe  
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Screener  
Forecasts  
Analyst  
Security  
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**Asset Management**  
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**Currently Excluded Stocks**

Delete	Ticker	Duration	Expires
<input type="checkbox"/>	GRA	Permanent	

Remove checked exclusions

**Add Exclusion**

Ticker

☒ Temporary exclusion  
Expiration Date:  (mm/dd/yyyy)

☐ Permanent exclusion

Add Exclusion

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FIG. 12

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Interactivefunds.com: Analyst Screener - Microsoft Internet Explorer

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**Eliminate Analysts Not Meeting the Following Criteria**

On/Off Setting	Value
<input type="checkbox"/> Minimum score per analyst	0
<input type="checkbox"/> Top percentage of analysts	1
based on	Points
<input type="checkbox"/> Minimum Title	Intern
<input type="checkbox"/> Minimum number of closed forecasts	3
<input type="checkbox"/> Minimum months of activity	1
<input type="checkbox"/> Analysts not belonging to the following group	Group 1

Save

Done Local Intranet

FIG. 13

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InteractiveFunds.com: Forecast Screener - Microsoft Internet Explorer

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Address http://prod:8080/peun/forecast\_screener.tcl Go Links

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**Eliminate Forecasts Not Meeting the Following Criteria:**

On/Off Setting	Value
<input type="checkbox"/> Minimum percentage probability of occurrence	5
<input type="checkbox"/> Maximum number of days since forecast date	120
<input type="checkbox"/> Most recent forecast (by analyst) per security	
<input type="checkbox"/> Forecasts not bypassed	
<input type="checkbox"/> Minimum stock specific accuracy	5 %

Save

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FIG. 14

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InteractiveFunds.com: Security Analysis Screener - Microsoft Internet Explorer

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Address http://prod-8080/ipmm/security\_screener.tcl Go Links

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**Security Analysis Screener**

Eliminate securities not meeting the following criteria:

On/Off Setting	Value
<input type="checkbox"/> Minimum number of forecasts	2
<input type="checkbox"/> Minimum number of forecasts	2
<input type="checkbox"/> Minimum number of forecast close dates	2
<input type="checkbox"/> Minimum percentage of total points	01
<input type="checkbox"/> Minimum number of total points	0

Save

Done Local intranet

FIG. 15

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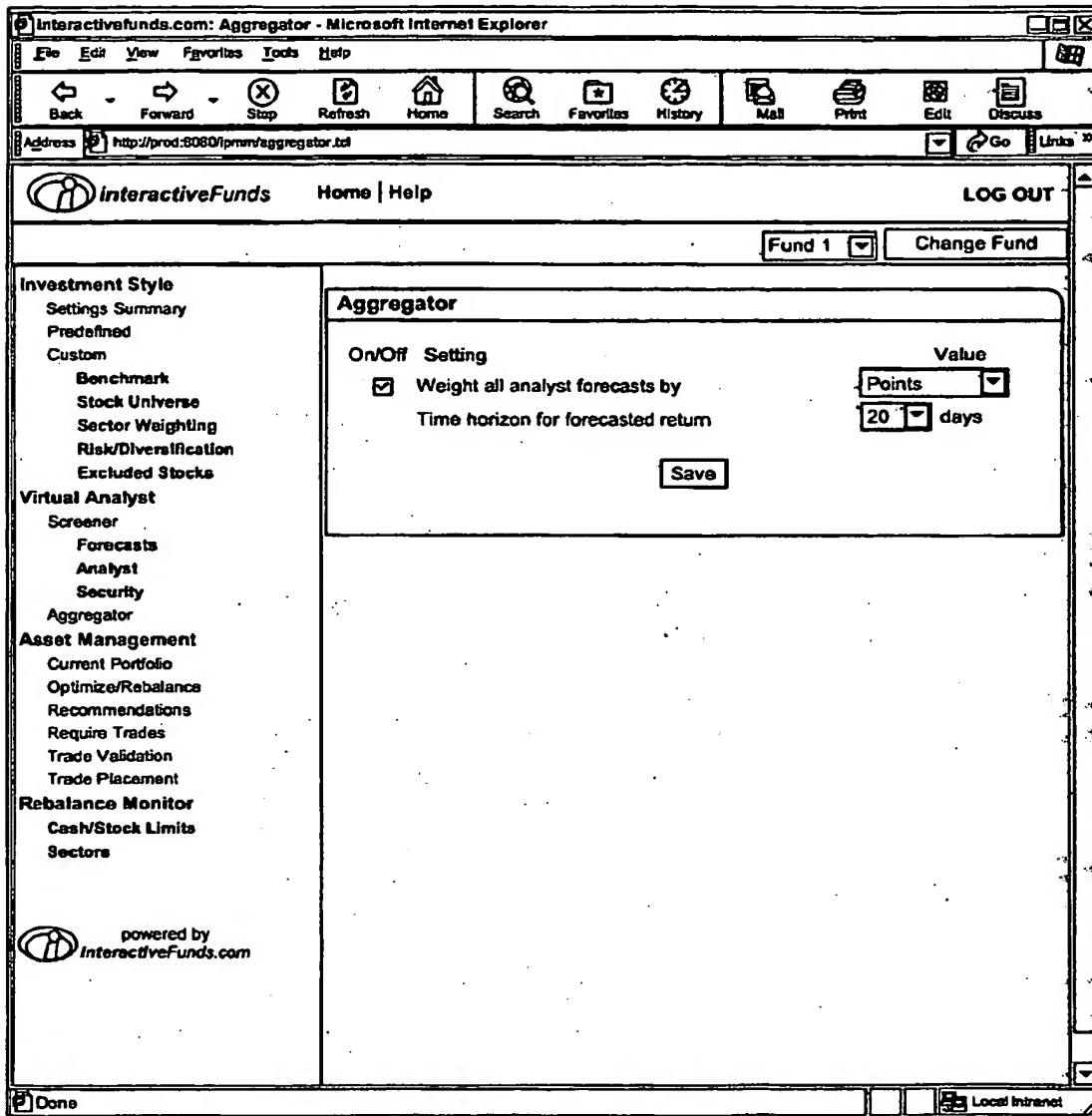


FIG. 16

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Interactivefunds.com: Risk/Diversification - Microsoft Internet Explorer

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Address http://prod:8080/tpmm/risk\_diversification.tcl Go Units

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**Risk/Diversification**

Period/Frequency 60 months

Risk Model Markowitz Full Historical

☐ Minimum Number of securities in portfolio

☐ Maximum number of securities in portfolio

**Legal Requirements for Compliance with Diversified Investment Company Status**

Maximum percentage of portfolio in any given stock %

Maximum percentage of outstanding voting shares %

Percentage of holdings meeting these requirements %

**Stocks not bound by the Legal Requirement**

Minimum percentage of the portfolio in any given stock 0 %

Maximum percentage of the portfolio in any given stock 3 %

Save

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FIG. 17



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InteractiveFunds.com: Optimize/Rebalance - Microsoft Internet Explorer

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**Notification**

☐ Even if other conditions are not met, rebalance portfolio weekly

☐ Email notification when rebalance monitor finds exceptions

**Cash Constraints**

☒ Maintain cash component between 0 % and .05 %

☐ Maintain minimum cash level \$ 0 K

☐ Project cash balance x days into the future 0 days

**Turnover Constraints**

☒ Constrain Turnover

Bid/ask spread around closing price +/- .2 %

Transaction cost/commission per share \$ .035

Tax rate for fund (capital gains) 20 %

Risk tolerance (0 = minimum risk, 100 = maximum risk) 50

**Additional Constraints**

☐ Implement round lot restriction

☐ Minimum of shares that each position must contain

Save Rebalance Now

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FIG. 18

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InteractiveFunds.com: Sector Weighting - Microsoft Internet Explorer

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Address http://prod.8080ipmnv/sector\_weighting.js

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**Sector Weighting**

☐ No sector allocation limits

☐ Allocation relative to benchmark snapshot

☒ Absolute sector allocation limits

☐ Allocation relative to moving benchmark

Sector	Min %	Max %	SPX %
Consumer	18.2	27.2	22.70
Utilities	2.6	3.8	3.20
Health Care	7.8	11.8	9.70
Technology	25.4	38	31.70
Energy	4.6	7	5.80
Financial	12.9	19.3	16.10
Transportation	.4	1.6	0.50
Capital Goods	8.2	19.2	7.70
Basic Materials	2	2	2.00

Portfolio Benchmark: SPX

☒ Minimum

Percent Less Than Benchmark  %

Percent Absolute Minimum Level  %

☒ Maximum

Percent Greater Than Benchmark  %

Percent Absolute Maximum Level  %

Save

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FIG. 19

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Internet Explorer window: **interactivefunds.com: Benchmark**

Address: <http://prod:8080/tpmn/benchmark.tcl>

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**Benchmark**

Benchmark	<span style="border: 1px solid black; padding: 0 20px;">S&amp;P 500</span> ▼
Minimum portfolio beta	<span style="border: 1px solid black; padding: 0 20px;">1</span> ▼
Maximum portfolio beta	<span style="border: 1px solid black; padding: 0 20px;">1.3</span> ▼
<span style="border: 1px solid black; padding: 2px 10px;">Save</span>	

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FIG. 20

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InteractiveFunds.com: Recommended Trades - Microsoft Internet Explorer

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**Rebalance Monitor**

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**Comments for Trade Desk**

**Portfolio Recommendations**

Company Name (Ticker)	Action	Amount
Talbots Inc (TMB)	BUY	\$888841
Veeco Instruments (VECO)	BUY	\$763177
Speedfam-Ipec Intl Inc (SFAM)	BUY	\$595651
Doubleclick Inc (DCLK)	BUY	\$307905
eBay Inc (EBAY)	BUY	\$783177
E*Trade Group Inc (EGRP)	BUY	\$280589
Virata CP (VRTA)	BUY	\$291659
Prologis Trust (PLD)	BUY	\$293983
UST Inc (UST)	BUY	\$734017
Time Warner Inc (TWX)	BUY	\$718154
Tularik Inc (TLRK)	BUY	\$327076
Broadcom Corp Cl A (BRCM)	BUY	\$286941
Idec Pharmaceuticals Corp (IDPH)	SELL	\$6581736
Targeted Genetics Cp (TGEN)	BUY	\$467624
Persistance Software Inc (PRSW)	BUY	\$384340
Elan Corp Plc (ELN)	BUY	\$327076
MMC Networks Inc (MMCN)	SELL	\$4320799
Critical Path (CPHI)	BUY	\$318538
Agile Software (AGIL)	BUY	\$309738
Christopher & Banks Corp (CHBS)	BUY	\$783177
Grey Global Group Inc (GREY)	BUY	\$327076

Notify Trade Desk to Execute Trades

Done Local Intranet

FIG. 21